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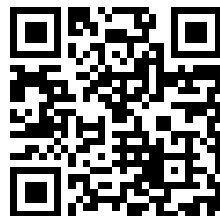


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THE NEW YORK
PUBLIC
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TILDEN FOUNDATION

Jan 1916

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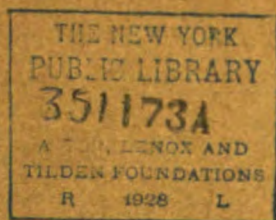
DRILL CHIPS

For JANUARY



NEW YORK
PUBLIC
LIBRARY

PD
1 Cleveland



We build our future, thought by thought,
Or good or bad, and know it not;
Yet so the universe is wrought.
Thought is another name for fate,
Choose, then, thy destiny and wait—
For love brings love, and hate brings hate.

—Anon.

ROY W. W. W.
OLIVER
Y. A. R. L.

DRILL CHIPS

JANUARY 1916

DRILL THREE CHIP ONE
THE CLEVELAND TWIST DRILL CO.

Andrew E. Coburn, Editor

ANY resolve, in itself, isn't worth much until it has been vitalized by action. And the trouble with most of the noble New Year resolutions is that they never get past the starting point. They are born and die in the same breath. Moreover, no intention, however praiseworthy, is any better for having been conceived on the first of January. The idea is that if we are going to improve our habits or morals, let us do it without so much fanfare and without stalling around about New Year's Day. Then, if we fall by the wayside, we'll not fall so far or so hard that we can't try again.

Below we are going to offer a few suggestions that may be taken without fear of ptomaine poisoning, or any other bad effect. They can't do any harm and they are positively guaranteed to produce beneficial results, if faithfully applied.

Whereas:

We are safely launched on a brand New Year and have survived the many bad things we did do and the good things we



No.
403



H. S.
Taper
Shank
Drill



No.
407



H. S.
Three
Fluted
Drill



No.
417



H. S.
Straight
Shank
Drill



No.
426



H. S.
Oil
Tube
Drill



No.
436



H. S.
Blacksmith's
Drill



No.
444



H. S.
Bonding
Drill



No.
930



H. S.
Paragon
Forged
Drill
Holds
World's

didn't do, and, whereas, we have partiall defrauded the law of compensation in that we are not dead or in jail;

Be it resolved:

That we take advantage of our past mistakes and prepare for a better future. If we appreciate our shortcomings, there is still some hope for us. The wise man knows when he has been a fool—the fool doesn't;

That we will get the fullest measure of life out of this existence by caring for our physical machinery, by being temperate, moderate and rational;

That we will make an effort to develop our self-control and restraint, knowing that will power, if not nurtured and cultivated, becomes weak and flabby, like an unused muscle;

That we will analyze ourselves to find out where we're going and why—and that then we will concentrate in order to get there. If we have been trifling with or deliberately assassinating time, let us recognize that we are dissipating our most prized possession. Let us cut out the loose, inconsequential talk and get down to some work that will produce results. Let us have a purpose, an ambition, an ideal, and pursue it relentlessly, realizing full well that even if we don't achieve the goal, there is a fine and broadening exercise in the trying.

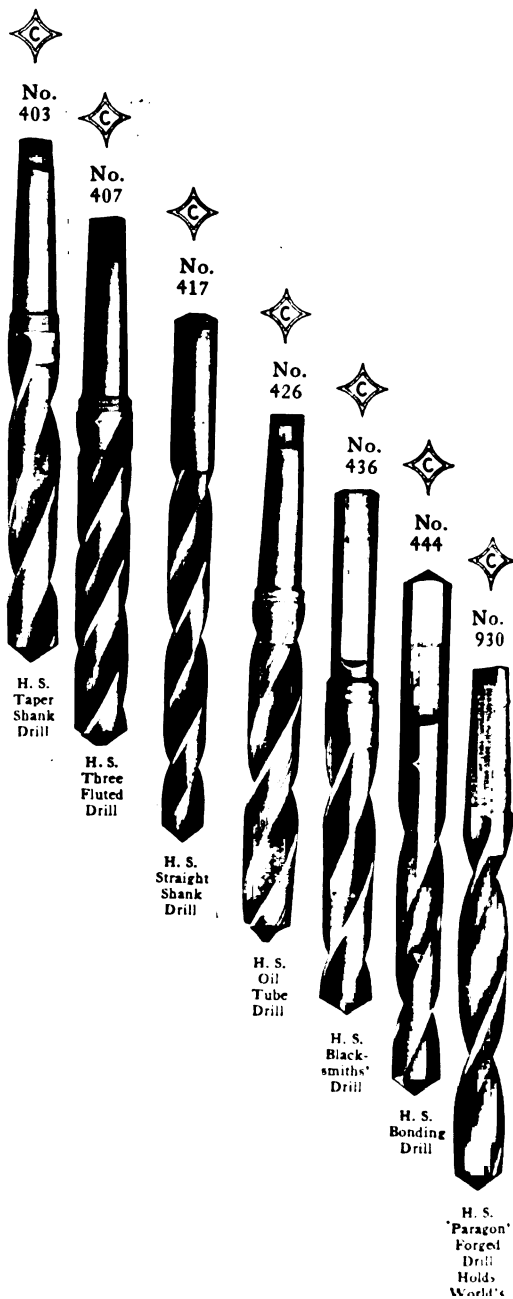
"IT'S THE UNEXPECTED THAT ALWAYS HAPPENS"*

An Explanation and an Apology

IGH Speed Steel so called, compared to the life of the Crucible Steel industry, is a very young baby.

In the year 1900, the now celebrated engineer, Fred W. Taylor, began a long series of experiments to improve the cutting properties of tool steel. Tools made of Crucible Steel must be hardened to a cherry red and then quenched in water, and then the hardness reduced by slowly reheating until the proper *temper* is reached which is best for the kind of work each tool is intended to be used for.

If such tools—say twist drills—are crowded into the work beyond a certain rate of feed per revolution, or the revolutions increased beyond very narrow limits, they begin to "heat up," and if they "heat up" beyond the tempering point, say 500 degrees Fahrenheit, then they begin at once to grow softer and consequently less and less efficient. Mr. Taylor wanted to produce a tool that would stand a much higher rate of revolution, and to do this he saw at once that he must have a steel that would not grow soft at such low temperatures as 475° or 500°. Mr. Taylor finally succeeded in producing a steel that could be heated for hardening very close to the melting point and could be *hardened* by cooling in the air and he *tempered* them in melted lead. If the heated tool



was plunged into water it would fly all to fragments. Tools made of this steel would continue to cut after the heat produced by the rapidly revolving work had made them red hot. In other words, the steel having been tempered in red hot lead did not lose its cutting qualities until the heat generated during the work reached a higher temperature.

Mr. Taylor took out patents on this High Speed Steel and tried to control its manufacture and use in this country. The steel manufacturers of England and this country either took out licenses to manufacture under the Taylor patents, or by improvements, changes and substitutions of elements evaded them and finally got control of the markets, and are now the only source of supply.

The steel made by Mr. Taylor was very difficult to work, or machine, and was practically used only for such tools as could be forged and ground into shape, such as lathe and planer tools.

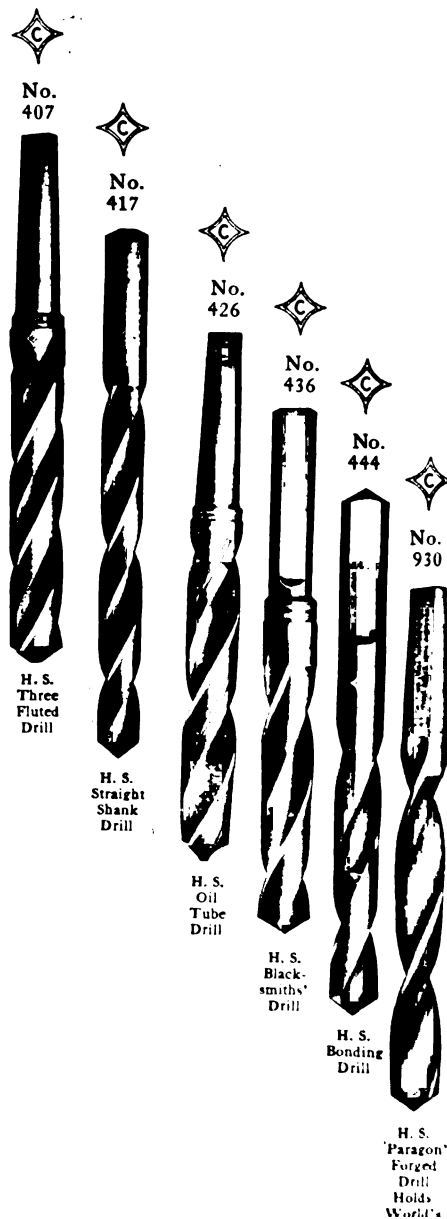
In 1903 there was imported into this country a beautiful quality of High Speed Steel that could be annealed and machined with great ease called Novo, and a few twist drills were made from this material.

It was 1904 before the High Speed Steel began to cut much of a figure in the twist drill business. From that time forward the consumption of this material increased by leaps and bounds until in 1913 and 1914 fully 25% of all Twist Drills manufactured by this Company were made of High Speed Steel.

In 1903 and 1904, the price of High Speed Steel in large quantities was practically 75c per lb. As the demand for this material grew and the processes of manufacturing it improved, the price was gradually reduced until in 1914 it reached practically 45c per pound in wholesale quantities. The principal difference between the Commercial Carbon, or Crucible Steel, and the High Speed Steel, is the introduction, or incorporation, in the melted mass while in the melting pot or crucible, of 13% to 20% in weight of Tungsten.

In January, 1915, we made contracts with the steel manufacturers for a sufficient supply of High Speed Steel to take care of all of our estimated requirements for the year. This estimate was based on our average sales for the previous years, and a liberal allowance for a natural or average increase. The steel manufacturers were able at that time to get all the Tungsten they required and covered all contracts they made with orders for the necessary quantity. Then something happened. England put an embargo on Tungsten early in 1915 and the supply from the rest of the world was insufficient to take care of the normal requirements of this country, to say nothing about the enormous demands of the ammunition manufacturers.

In June 1915 the shortage of High Speed Steel began to make itself felt and the scramble of consumers of twist drills to cover their requirements, not only for immediate use, but for a year's supply ahead, commenced. Orders poured in on us for High Speed tools from all quarters of the country. We strained every nerve and left no stone unturned (regardless of cost) to get the



material to supply our regular customers' needs. By August the situation became very acute. Our stock on hand of finished tools and raw material was very rapidly disappearing and we found it impossible to replenish our stock of raw material at the old prices. Much against our will, therefore, we were obliged to raise our prices and to notify our regular customers that it would be impossible for us to supply them with more than their average purchases for the last five years, at the prices quoted on January 1st; that when their purchases reached that amount we would be obliged to bill all further orders at prices based on the market price of High Speed Steel. We were offered thousands and thousands of dollars' worth of business from very large and prominent concerns who had never favored us with their orders before. They were willing to pay us greatly advanced prices if they could only get the goods, but this business was politely but firmly declined as we felt in duty bound to take care of our old customers and to supply their needs first. As long as our stock of finished tools lasted and we could obtain the raw material at our contract price we continued to fill the orders of our regular customers at the old prices.

By October 1st, the price of High Speed Steel had risen to \$2.00 per lb. and very little could be obtained even at that figure. A one-inch drill blank weighs 3.25 lbs.—at \$2.00 per lb. the blank is worth in cash \$6.50. The list price of this drill is \$6.25, deduct your January discount from the list price and you can see at a glance what a loss the Drill Co. would have to meet on 3.25 lbs. of steel if we continued to sell our tools at January 1915 prices and had to pay \$2.00 per pound and upwards for the raw material.

With the dawn of the new year 1916, it is impossible to predict what the price of High Speed Steel will be, or whether it can be obtained in any large quantity at any price.

There are some kinds of material that can be machined or drilled to advantage by high speed tools only, but the great majority of work can be successfully performed by carbon steel tools, altho not so rapidly. Our experience convinces us that in the past many shops have bought high speed drills when neither the machines used nor the work to be performed warranted their use. Until the European war is over, there will be a great scarcity of High Speed Steel, and the price will be prohibitive for all but very exceptional purposes.

▼ ▲ ▼

AN AMERICAN MERCHANT MARINE

ONE of the most serious economic problems before the people of the United States is the lack of control by American citizens of the ocean transportation of American products. Great Britain exports 55% of her products; Germany 45%. Those nations control the delivery of their goods to the ultimate purchaser. The United States does not control its ocean transportation and as a result, exports only 5% of its wares. It is absolutely necessary to increase our exports if we are to find an increasingly wide outlet for our factories, if we are to keep capital and labor profitably engaged. And in order to increase our exports we must learn and thoroughly learn that *our land enterprises are impossible of complete and final success unless they are supplemented by proportionate investment in maritime enterprises that control the transportation of our products to customers outside of our own domain.* When we come into a realization of these facts, then we can enact such legislation that



No.
417



H. S.
Straight
Shank
Drill



No.
426



H. S.
Oil
Tube
Drill



No.
436



H. S.
Blacksmiths'
Drill



No.
444



H. S.
Bonding
Drill



No.
930



H. S.
'Paragon'
Forged
Drill
Holds
World's
Record

RECLAIM YOUR

PERFECT DOUBLE-TANG" SOCKET shop using taper shank drills. But in expensive, drills cannot be scrapped or discarded. Any taper shank tool, carbon or high speed steel, can be reclaimed through the use of a "Perfect Double-Tang" socket—stronger than the old one—can be ground to fit any spindle with our patented socket, gives



"Perfect Double-Tang"

- (1) Have two driving slots in
- (2) Hold taper shank tools
- (3) Not only reclaim old tools but give longer service because
- (4) Can't get out of order
- (5) Fit any spindle with a re

Once tried you will find "Perfect Double-Tang" Socket

THE CLEVELAND

CHICAGO: 9 NORTH JEFFERSON STREET

HIGH SPEED DRILLS



TS are useful and economical adjuncts to any
se days when high speed steel is scarce and ex-
d simply because the tang has been broken off.
ed steel, can be quickly and permanently re-
e-Tang" Socket. A new tang—25% to 60%
on the shank in two or three minutes and
tool a new lease on life.



"Tang" Sockets

ed of the usual one.
that the tang cannot twist off.
ut they enable the new tool to
e tang cannot twist off.
loose or adjustable parts.
r taper hole.

is indispensable to efficient and economical shop operation

WIST DRILL CO.

LAND

NEW YORK: 30 READE STREET



No.
426



H. S.
Oil
Tube
Drill



No.
436



H. S.
Black-
smiths'
Drill



No.
444



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Forged
Drill
Holds
World's

will make marine ventures attractive enough for American citizens to invest their lives, their labor and their savings therein.

The Honorable William G. McAdoo, gives proof of his wisdom when he talks of a Merchant Marine and preparedness in this fashion:

"The most indispensable factor in any sensible plan of national defense is a powerful navy, capable of striking with effect—both offensively and defensively—supplied with essential naval auxiliaries in the form of an American merchant marine and manned by American seamen who are ready and willing to fight for the Stars and Stripes against any enemy on the face of the earth.

What is a naval auxiliary? It is a fleet of merchant vessels so constructed that they may render essential service and assistance to our battleships and cruisers in time of war and serve the needs of our commerce in time of peace. A navy, no matter how strong in battleships, cruisers, torpedo boats and submarines, is only partially equipped without a merchant marine auxiliary. It is a fact, and every naval expert will so testify, that a merchant marine naval auxiliary is just as essential to the effectiveness of the navy, considered a complete fighting machine, as the guns upon the decks of our battleships and the seamen upon whose skill and valor the effectiveness of those guns depend."

The linking up of an American merchant marine with preparedness is an interesting idea, and Mr. McAdoo expresses it both forcibly and patriotically; but aside from preparedness the American merchant marine is linked up mighty close with our daily bread and butter. The cost and supply of the necessities of life are much more dependent upon an American merchant marine than the average man has any conception of.

The restoration of the American overseas marine is not the concern of any one political party, nor of any particular interest or set of individuals, nor of any one section of our country; it is a NATIONAL issue, of vital moment to every man, woman and child throughout the land.

History proves that no country not endowed with maritime ability has ever risen to first importance. History proves, also, that no nation can reach the pinnacle of commercial success unless it controls the transportation of its exports from producer to customer, and the banking, exchange, and insurance transactions which accompany that commerce.

There is a close affinity between land industries and overseas trading. The development of the latter has direct bearing upon the employment of both labor and capital, and where a nation has no ships that development becomes correspondingly difficult. Irregularity of employment is a curse to which poverty and discontent are sequel. With us in America it is either "feast" or "famine." Employment of capital goes hand in hand with employment of labor; and continuous employment of both is essential to our industrial welfare and progress.

Demand regulates activity in all manufacturing institutions. When demand is less than capacity, factories must either run on short hours or else close down entirely from time to time, and when this condition obtains, both labor and capital suffer; the cost of factory production increases; and there is corresponding decrease in our ability to compete with foreign nations for the world's trade. In many lines of manufacture production frequently outstrips consumption; and notwithstanding the tremendous absorptive powers of the United States our manufacturers in many lines have often been face to face with this condition of output exceeding demand.

Since our home markets are limited, we must, perforce, find foreign markets which will take up our surplus goods, in order that the development of our industries may flow along uninterruptedly, and both labor and capital find continuous and profitable employment. No other economic problem confronting our country today approaches in importance the development of foreign markets for American products. Such development means national progress instead of national stagnation, if not actual retrogression.

We export about 5 per cent. or one-twentieth of our manufactured goods. If we should develop our foreign trade possibilities to the fullest extent—which is possible only by possessing an adequate Amer-



ican merchant marine—the percentage of our exports of manufactured goods would greatly increase. It required no great stretch of the imagination to picture the prosperity which would spread its mantle of contentment and happiness over the length and breadth of the United States if this 5 per cent. were increased to even 20 per cent.—to say nothing of 45 per cent. or 55 per cent., which are the percentages of manufactured exports for Germany and England.

In the exportation of foodstuffs competition does not figure, for foreign nations are merely buying from us the things they cannot themselves grow in sufficient quantities for their needs; but this is not true of manufactured goods. In the marketing of these we find ourselves in direct competition with other manufacturing nations of the world—keen competition, sometimes unscrupulous competition; and in the absence of American ships to carry our goods, competition which we cannot hope to meet.

The United States is like one great department store that attempts to compete with another while depending upon the delivery service of its rival. Under such conditions it could not possibly survive, for the business house owning the delivery service naturally would take every advantage of its position and deliver its own goods first and use every effort to capture the trade.

No object of vital national concern has received more consideration by our lawmakers, commercial bodies, and public press than has American overseas marine; but in spite of all this study and effort the United States stands today relatively less important among the maritime nations of the world than at any other time since its birth as a republic.

If argument and discussion could bring about a revival of American shipping, our flag would long ago have been a familiar sight in the harbors of the world, for in Congress and elsewhere every phase of American shipping has been considered not only once but many times, and from every possible angle. There are a thousand documents prepared by government agents and others which are crowded with detailed facts and figures relating to shipping.

This prolonged controversy shows clearly that the chief reason our overseas marine cannot expand is, that American ships are unable to compete economically with foreign ships because of certain advantages given

to foreign ships by the countries whose flags they fly. Why is it that, after so many years of fruitless effort to revive our shipping, Congress does not recognize this fact and take such steps as are necessary to meet the situation?

If Congress has failed to enact proper shipping laws in the last sixty years, is it not logical to assume that there has been no great demand from the people as a whole for such laws? And is it not logical to assume, also, that the absence of such demand has been due to lack of knowledge on the part of the people of the national necessity for such laws?

The larger percentage of people living 200 miles and over inland have never seen the ocean; they do not know what an ocean liner or freighter looks like, except for occasional pictures which may have come under their observation. At least 70 per cent. of the people of the United States who elect congressmen and who influence their votes are entirely out of touch with maritime matters. A merchant marine means nothing to them whatever. And congressmen reflect the attitude of their constituents.

Who could doubt what the action of Congress would be if the great voting population of the country said to their congressmen "WE WANT A MERCHANT MARINE." They need not particularize; just the simple demand that the United States shall take its proper place among the maritime nations of the world would suffice.

Effective legislation on maritime affairs will follow public demand for it, but not if this demand comes from what is termed the "shipping interest," or only from the people living in the maritime states. *It is the people of the Great Middle West and South who hold the destinies of the nation in their hands.* The problem of the overseas transportation of American products does not concern the so-called "shipping interest" to one-tenth the extent that it concerns the dwellers inland who provide the cargoes that make shipping possible. Therefore, though the reader's home and business may seem to be remote from and utterly dissociated with any form of maritime endeavor such is not really the case. The manufacturers and the farmers of the Mississippi Basin, their employees, and the American people at large have really built for



Page Thirteen



No.
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H. S.
Bonding
Drill



H. S.
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Forged
Drill
Holds
World's

non-American nations the countless millions of dollars' worth of shipping represented by "Vaterlands," "Imperators," "Aquitania," "Mauretania" and the vast fleets of freighters that carry over 90 per cent. of this country's exports.

No great object is possible or ultimate and effective fulfillment without a leader, or a leading Spirit. All this discussion and agitation of the worthies issue will lead nowhere unless there is to be a guiding hand. And now that the National Marine League has been formed, we may look for some order to evolve from the chaos. If this league—which is free from the control of any industry, political, capital or labor "interest"—can do for the people of these United States as much as the German Marine League has done for Germany, it will have served a generously patriotic end. The avowed purposes of the Marine League are: (1) To awaken the people of the United States, whether living on the seacoast or in the interior, to a full understanding of the necessity for re-establishing an overseas Commercial Marine, particularly with a view to increasing our commerce with South America and Asia through the Panama Canal; (2) To bring about nation-wide recognition of the paramount need for providing export outlets for the products of our manufacturing industries, that labor and capital may be steadily and profitably employed; (3) By the compelling force of imperative public opinion, to cause the enactment by Congress of such laws as will most speedily and effectually restore our former standing as a great maritime nation.

Hence it is that this big, momentous issue directly concerns YOU, today, and for all time, regardless of where you live, what kind of business you are in, how you conduct your business or to whom you (apparently) directly sell your goods. It means steadier employment and a larger income to you if you are working for someone else; continuous run of plant and decreased overhead charges if you are an employer of others; decreased taxation to all of us and larger net returns on investments.





C·T·D·IMMORTALS

WE pride ourselves on our ability to recognize genius when it is made plain enough, and to acknowledge it without reservation. We therefore and hereby extend our most felicitous felicitations to the photographer's fraternity. The wonders they accomplish are nothing short of uncanny.

Now then, the fifth immortal is Mr. Arthur L. Beardsley. He graduated from the general hardware business in Kalamazoo about 1902. His next move was to take up residence in Cleveland while he was trying to persuade The Cleveland Twist Drill Company that they could expect no permanent success without his services. It has since been rumored that this claim was a mere expedient superinduced by Nature's law of preser-

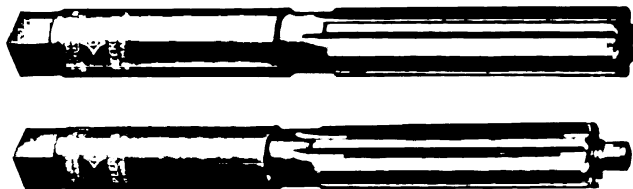
vation. But anyhow, persistency won a signal victory and at last, Mr. Beardsley, being such a familiar figure in and about our main offices, was engaged to manage our large Chicago branch. It was figured that there he could produce some revenue for the company instead of being just a notable social acquisition around the home plant. That all happened 14 years ago and Mr. Beardsley's branch offices do a far greater volume of business than any other of our branches in Chicago. Aside from all this, the genial Arthur's first claim to distinction is that he is the inventor, discoverer, father and mother of the justly celebrated "Perfect Double-Tang" Socket. (Patented, manufactured and sold only by The Cleveland Twist Drill Company. See pages 8 and 9. All orders promptly attended to.—Adv't.)



No.
930



H. S.
'Paragon'
Forged
Drill
Holds
World's



"PEERLESS" REAMERS

"PEERLESS" High Speed Reamers have a soft but tough steel body in which high speed steel blades are inserted. The joining is done by our patented "Brazo-hardening" process, which produces practically a one-piece solid tool. The blades are guaranteed not to come loose. ¶ On account of the small quantity of high speed steel used "Peerless" Reamers are much less expensive than the ordinary solid high speed reamer. ¶ "Peerless" High Speed Expansion Reamers, by reason of their soft steel body, will stand more expansion than carbon reamers of similar type. Moreover, they are the only expanding reamers with as many cutting edges as a solid reamer. ¶ Various styles are shown in our No. 38 catalog. Shall we send you a copy?

THE CLEVELAND TWIST DRILL CO.
CLEVELAND

CHICAGO: 9 NORTH JEFFERSON ST. NEW YORK: 30 READE ST.

Blessed is he who has found his work; let him ask no other blessedness. He has a work, a life purpose; he has found it, and will follow it! How, as a free-flowing channel, dug and torn by noble force through the sour mud-swamp of one's existence, like an ever-deepening river there, it runs and flows;—draining off the sour festering water, gradually from the root of the remotest grass-blade; making, instead of pestilential swamp, a green, fruitful meadow with its clear-flowing stream. How blessed for the meadow, itself, let the stream and its value be great or small! Labor is life.—*Carlyle*.



Tech.

DRILL CHIPS

OR FEBRUARY

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Success doesn't just happen —
Neither does failure.
Each is the result of little-known laws
that are older than man himself.

DRILL CHIPS

FEBRUARY 1916

DRILL THREE CHIP TWO
THE CLEVELAND TWIST DRILL CO.

C. H. Handerson, Editor

THIS is the month in which the first great apostles of modern business success raised their feeble introductory cries. We need not remind you of the doctrine first made famous by Washington—the doctrine of Truth, first, last and all the time. Neither need we remind you of the powerful sincerity of Lincoln—and what, after all, is this thing Sincerity but Truth lived in daily life?

Many philosophies have their day, but the philosophy of Truth will prevail utterly and eternally. We find proof of this on every hand.

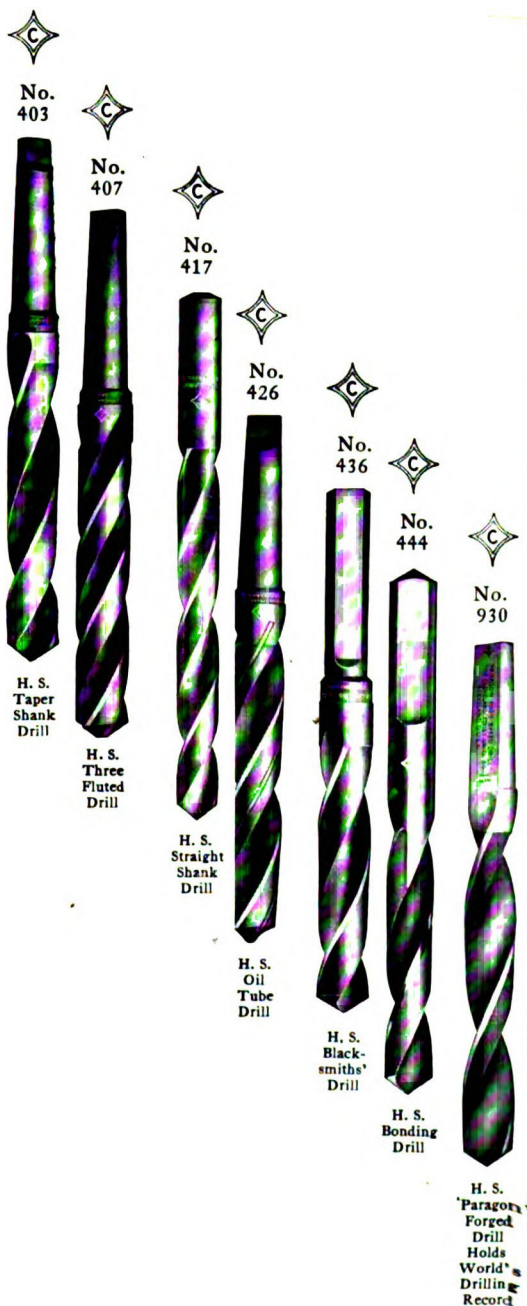
You and I and all of us who have withstood the business ups and downs of the last two or three decades are today selling one and the same thing.

Forty years ago you were selling locomotives, pumps, machine tools or what not. We were selling drills and reamers.

But time has changed all that. Time is a great leavener.

You are still *making* locomotives and we are still *making* drills and reamers—but we are, each of us, *selling* the self-

Copyright, 1916, by The Cleveland Twist Drill Co.



same thing — Truth, the Sincerity behind our product.

Our mode of expression may be different. You may talk in terms of gallons, miles or pieces per minute and we in terms of holes per drill. Yet we are both singing the same tune and our words when translated are the same — "Sincerity in business pays." It is the one commodity that is ever certain of a market. It will always continue to be in demand. As time rolls on it will be more in demand.

It has a price, yes, since it costs more — a trifle more — to produce sincere goods than to turn out a substitute. But the selling expense is so much less, that it more than compensates for the slightly increased first cost. The repeat orders bred by sincerity, require no salesman or sales expense.

Barnum and his creed are dead. The business survivals of today prove it. The highway of commerce is strewn with the bones of industries who would not heed the doctrine of permanence in business.

We believe that your permanence and our permanence is due — not to a wild scramble to meet a price — but to a sincere endeavor to make a thing that will continue to sell itself ad libitum, because of the sincerity wrought into its makeup.

If you have no other reason than pure selfishness, make the best product that your capital, your experience and your ability can produce. Don't skimp. It will pay.

A DIFFERENT SORT OF PREPAREDNESS

FAR be it from us to sing aught but a harmonious strain in this national hymn of Prosperity Plus, but our sacred duty to our readers demands that we assume the graceful attitude of the corner cop and direct your attention to a flaw in the face of the future.

Praise Allah, we have an excuse for this disgraceful conduct.

'Tis this: There is a bromide wandering about, that offers passersby sage advice concerning the great utility of a timely stitch. In the protecting arms of this blond and buxom bromide we nestle.

Contrary to the hoarse croakings circulated at some boardinghouses, the convulsion across the water will cease—ultimately. We say this without fear of contradiction, believing that our phraseology is sufficiently indefinite.

On that happy day, when the denuded dove of peace shall pick her perch, the rivers of international hate will slink back into their subterranean and wholly proper channels, there to remain until the dogs of war have renewed their teeth and another brew of fanatics shall have risen up.

Eventually, of course, another convulsion will revive the waning business of the war correspondent. It must be ever so. For ages the big bugs have feasted fat on the little bugs, and we have no reason to suppose that the national table de hôte of the future will



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Paragon
Forged
Drill
Holds
World's
Drilling

be any less tempting than that of the past, or that a sixteen-inch naval rifle will lose any of its moral suasion. However you and I need not chew our nails in an agony of fear. That day is far off.

But there is a day coming, when a war of a purely commercial nature will break upon us. It is upon preparedness for this war that we now speak.

Today there are some four classes of business directly interested in the production of war materials and hence in the proximity of peace.

There is the old established organization whose entire plant is at present consecrated to the production of munitions. Its previously established domestic trade is either languishing by the road like a dilapidated dramatist or being badly mishandled on a contract basis by outsiders.

Next comes the type of plant organized for and only for the duration of the storm across the sea. In its very inception it must have recognized its comparatively transitory nature and therefore must have prepared an easy and painless exit from the field of munition manufacture. Hence this type need cause us but little worry.

In the third class are the smaller fry, both old and new, who are handling the overflow operations of the larger munition makers.

And lastly there is a vast horde of smaller shops, newborn on the present wave of necessity. Some of these are engaged in the contract business above referred to, while others are establishing themselves on the fag-ends of the business left languishing by the opportunists of the first classification.

Of course there are others, but these will serve to point the tale.

When Mars casts off his helmet, our four classes of friends will be like unto four wrestlers striving on a mat, which at best has but space for two of them.

The big manufacturer, who for months has forsaken his domestic trade for the alluring call of munitions, will turn to his old channels of trade only to find them shrunken and dissipated amongst many small competitors. But his treasury will be full of the stuff that is ammunition for a commercial battle. Well-heeled for a knock-down-drag-out tussle, he will stake his all to regain his lost prestige and the neglected profits of purely domestic origin.

His hat once more will be in the ring for American business. But, unfortunately for his peace of mind, his will not be the only hat therein. Others, who have grown in the shadow of his greatness, will give him many a hard knock before he regains his old-time place in the commercial life of his countrymen.

Although Party Number Two, organized solely for the production of war materials, may eliminate himself forthwith, folding his tent like the wandering Bedouin and simmering away to more timely fields, yet his plant—a large one mayhap—will remain behind him staring and vacant. Some rattle-brained fool may see the boarded windows and cry "Bad business." If enough of his feather take up the cry, it may result in a disturbing commercial depression.

Party Number Three of the small shop that has been dallying with the crumbs from the table



No.
407



H. S.
Three
Fluted
Drill



No.
417



H. S.
Straight
Shank
Drill



No.
426



H. S.
Oil
Tube
Drill



No.
436



H. S.
Black-
smiths'
Drill



No.
444



H. S.
Bonding
Drill



No.
930



H. S.
'Paragon'
Forged
Drill
Holds
World's
Drilling

of the large munition maker, will test his plump purse and, with the confidence which it brings, sally forth to round up the domestic trade he knows to have been dropped in the commercial ash can by Party Number One, for whom he so lately labored. He will find Party Number One engaged in a like pursuit. A collision will impend and wreckage mayhap.

Party Number Four, grown sleek and prosperous beyond his wildest dreams of bliss from feasting on the home trade either contracted out to him or *completely* forsaken by neglectful Number One, will have had a tempting taste of the possibilities of the domestic field. He will smack his lips and cry lustily for more, and he may be so bold as to try for a toe-hold on the possibilities.

So we have three souls with but a single thought—the fair lady, Miss American Trade, and her doughty dowry. Some hearts are certain to be broken, when there are so many and pressing suitors. Much grinding and clashing of mercantile gears will result before the inexorable God of demand versus supply is sufficiently propitiated.

True, there may be as much if not even more gravy than before, but it looks distressingly as though there might be far too many cooks.

But be of brave hearts, my lads. While some few ill-starred manufacturers, sinking in the Goodwin sands of their own commercial blindness and unpreparedness, will raise the cry of "Fire," you and I will know that there is no fire—that the smoke is but the natural result of grinding gears and adjusting cogs.

All we ask is that commercial mariners look out to sea.

A tide is coming which, taken at the flood, will lead on to a safe and sane future. But safety above

all else—remember the undertow. Be not totally deceived by the siren call of this Domestic Lady. Forget not, when peace comes, that there may still be a dire need in Europe for our products, though they will be of a different nature than those which we are now furnishing her.

Let us set our house in order for peace today. Let us get our domestic trade once again well within our own hands so that, when the peace comes, it will be as surely ours as before we forsook it—if forsaken it we have. Preparedness is not alone a political issue—it is a commercial one as well.

If, now, we have been successful in detecting and pointing out the ruts in the road of the future, we have not lived as much in vain as we are often inclined to believe.

▼ ▲ ▼

OH! WE OF LITTLE FAITH!

OH shame upon us, we of little faith, who forever stand ready to crucify every modern prophet or idealist.

How little do we bestir our tiny brainlets nowadays.

How little do we regard the flight of time and the undeniable lesson that it would teach us—how a nation is beholden to its prophets above all other men.

Without them we must perforce become a jumbled mass of hurrying, idealess ants. With them we may become a thinking, doing, constructive, national organism, a vast potential force for accomplishing.

Stop in your mad rush. Think a moment.

Where would we be today, if it were not for those mighty dreamers of a century ago who had the power to drag this nation onward with them step by step?

If Washington had not dreamed a dream and then



No.
417



H. S.
Straight
Shank
Drill



No.
426



H. S.
Oil
Tube
Drill



No.
436



H. S.
Black-
smiths'
Drill



No.
444



H. S.
Bonding
Drill



No.
930



H. S.
'Paragon'
Forged
Drill
Holds
World's
Drilling

THIS "PARA



THE CLEVELAND TW

CHICAGO: 9 NORTH JEFFERSON STREET

OX" REAMER

Designed for one of our customers, illustrates the possibilities of "Paradox" construction. This tool reams a hole having twelve different diameters. Once the adjustable blades* are fixed in their proper place, twelve separate reaming operations are condensed into one, with great consequent economy. ¶ "Paradox" Adjustable Reamers, patented and controlled by this company, are made in all types and sizes. Due to the construction the blades, though adjustable, are practically solid with the body when fitted and locked into their place. ¶ For every single or compound reaming job there is a "Paradox" that can save you much time and expense.

ST DRILL CO., *Cleveland*

NEW YORK: 30 READE STREET



No.
426



H. S.
Oil
Tube
Drill



No.
436



H. S.
Black-
smiths'
Drill



No.
444



H. S.
Bonding
Drill



No.
930



H. S.
Paragon
Forged
Drill
Holds
World's
Drilling

acted upon it with the fullest co-operation of his people—where would we be today? Thank God that the common folk of '76 had some modicum of faith in the great prophets of their day.

Take any volume from the shelf of history. Choose at random if you wish. Every one bears the telltale print of a dreamer—a prophet.

Our land was discovered by a "dreamer"—as we please to call these explorers into realms unknown, be they mental or physical. Time without number our land has been augmented by or bettered by or saved by mighty "dreamers."

It is owing to these same thinkers-ahead that we are what we are—that we are at all.

Yet with much show of worldly wisdom, we still disregard the very lesson that history and experience would teach us, would we but heed.

Oh we grubbers in the ditch! We pant and sweat and fume in the ecstasy of selfish effort. Our own particular little future is our world. We admit that other and greater worlds may lie beyond. But we have no time for them. Let some other chap think for us regarding this nation's future, say we.

And there we stop, save for the hasty moment now and then devoted to the sacred American privilege of crucifying him, whom we once so gladly selected to think and lead for us.

By the way, what is the ultimate port, the ambition, the aim that we have for this nation?

Why are we so slow to answer? What will become of us if we will neither think for ourselves nor permit others to do this thinking for us?

Turn the pages of history back but fifty years ———

Lincoln was one of those idealists for whom we plead. He succeeded. His bust is in every well regulated public school as an inspiration for the coming generation.

We call him the Savior of his country—and all because he went to meet his Maker before some tittering trifler got a chance to wield the harpoon.

Had Lincoln lived, he must, by the law of averages, have made some little inconsequential misplay in the great game, and then we would all have forgotten his every claim to our support and for the insignificant wart upon his nose, would fain have had his head off.

Indeed it is a wise prophet who knows when to quit.

Prophet-baiting is the chief sport of us arm-chair diplomats. We never permit an idol, a prophet, an idealist to remain seated long.

We change favorites as easily as a college widow changes frat pins and usually we are the ones who are short-changed.

As a result, we bid fair to become a nation without aims, ideals, personality. These prophets that we bury so blithely are the men who should be forging our national personality and aim.

Meanwhile we rush thither and hither like inebriated automobiles. Every new moon sees some new and so-called national issue.

We have "issues" enough.

What we need today is someone to tell us what our real ultimate shall be as a nation—someone with the brain to dream and the force to make us follow.

A man without an ideal is a derelict. A nation without an ideal is like the beach comber, skimming a precarious existence from his faith in Divine Providence. A slow but terribly certain disintegration shadows the footsteps of the nation that will not stop and think of the morrow.

Two centuries ago we were a puddle on the face of Mother Nature. Then no one sat up nights in Europe to know what we'd do next.

But we're no longer running around in abbreviated trousers. We're big enough to carry matches. No longer can we twiddle our thumbs on the maternal mat. Our idiotic isolation is no more. We must be in at the game of nations. We can humbly refuse no longer.

We forget this, but Europe does not and cannot. Because we are no chattering child-nation, Europe looks to us for a decisive expression of our national personality and aim.

What is it?

We have none, and all because we are such fickle folk. Today we crown Caesar and tomorrow we whet the family carving knife and rush forth with blood in our optic to stab him in the back.



No.
436



No.
444



No.
930



H. S.
Black-
smiths'
Drill



H. S.
Bonding
Drill



H. S.
'Paragon'
Forged
Drill
Holds
World's
Drilling

For example:

Wasn't it you I heard, but a few short weeks ago, taking the delight in telling the latest "fordstory"? You gurgled joyously while ing in the reflected fame of this mechanical and social idealist.

You proclaimed him one of our national heroes, a landmark ample of what Yankee grit and determination can do. He was among men to you. He was an American. You were proud of You were proud of yourself because you came of the selfsame stock was Success,—hence you fell and worshipped.

And then he dreamed a dream such as the three wise men dreamed nineteen hundred years ago—a mighty dream of peace on earth.

In breathless suspense you waited to see which way Janus-faced would turn. Then Success from this new and untried project turned face away.

Instantly out came the editorial pitch-forks of the country. The paint was put on, the battle-cry of ridicule rang from the hill-tops and tossed high your dusty Stetson and hooted.

Another hero struck down for the merest wart upon the face of success.

Even Chauncey Depew is reported to have belied his own sagacity intimating that Ford was engaged in "a struggle for the front page."

Shame on all of us.

Ill-timed though this peace-angel may have been, you will live to the day you jeered so mightily.

Europe, we repeat, is asking us to give but one positive, distinct commitment of our faith, our creed and our ambition.

That peace ship was the first big, active, dynamic expression of American ambition that Europe, be she Celt or Teuton, has had.

The great mass of European population that is left cannot translate their diplomatic brick-bats and bouquets into their mother tongue, except their censors would have them. But they *can* visualize a ship, of impressive bulk, dedicated to the cause of peace.

They will forget mere words, but the ship and its mission they will remember.

They will get the message of that ship, when the ship itself is no longer among them. They will remember that it came for them.

You who say it failed are looking but a little way ahead. When Europe's mind is but a trifle less engaged, she will turn with eagerness to but the memory of that ship and then America's idealism will ring loud above the noise of strife.

Our national game of pooh-poohing the prophet is not a fault, it is a crime; for it is upon these very men that the future greatness of this nation depends. Yet we little-thinkers stand ever ready to crucify them for the slightest blemish on their record of success, for the smallest wart upon their nose.

It is to these guiding meteors of our era that we must look for a prophecy—a leader. You and I cannot cease our petty toiling. Therefore, stand back, give room, let these men, who are by nature fit, exercise their gift unhampered.

There was mighty little rocking of the boat back in 1776 and 1865 when our nation crossed the bar, and it is high time that some of our professional boat-rockers of today met the very fate that, Judas-like, they would deal out to their betters.

We have faith that America will again produce a prophet ably fitted to lead us.

When he comes, if he is not here now, let us cease our starved sensationalism, our fogging and pettifogging. Let the air be clear of our worse than useless prattling. Let these men look up, unharassed by the rattle of our rabble brickbats. For all their minor imperfections, their trifling errors, for all the warts upon their noses, it is to them that we must look for leadership in national thought and deed.

We have finished.



MERIT REWARDED

THIS page preserves to posterity the record of that day—January 25, 1916—upon which was made the first dividend distribution among the employees of The Cleveland Twist Drill Co. It is these employees who are most truly responsible for the consistent high quality of "Cleveland" products. They are the ones, more than all others, who have helped us to boost "Cleveland" quality higher and higher, day by day, and year by year.

They are the ones who have most truly made "Cleveland" drills produce



No.
444



H. S.
Bonding
Drill



No.
930



H. S.
"Paragon"
Forged
Drill
Holds
World's
Drilling
Record

more holes per drill, and have been most largely instrumental in placing the resultant profit in the pockets of "Cleveland" users.

Therefore you will recognize this newly adopted dividend sharing plan as only a due reward for services rendered all—both yourself and ourselves.

The details, as expressed in the formal resolution of the Board of Directors are interesting.

Whereas, it has long been the opinion of the directors of The Cleveland Twist Drill Co. that the welfare of a business is best served when the interests of the employees are linked as closely as possible with its success and prosperity;

And, whereas, The Cleveland Twist Drill Co. has, in the judgment of the directors, reached a point in its development where a division of the profits with its employees may with safety be undertaken,

Be it resolved that the following plan for sharing with the employees the profits of the company be and hereby is adopted.

1. Before any profits are divided with employees the stockholders shall receive 8% per annum.
2. When the above 8% interest has been paid to the stockholders in any calendar year, all cash dividends subsequently declared in that year will be divided between (1) the stockholders on the amount of their stock interest and (2) the employees on the amount of the salary or wages earned by them during the twelve months ending June 30th of that year as follows:
 - A. Employees who have been continuously in the service of the company for at least two years prior to July 1st, will receive dividends at the same rate as the stockholders.
 - B. Employees continuously in the service for more than one year and less than two years prior to July 1st, will get $\frac{3}{4}$ of that rate.
 - C. Employees who have served continuously for less than one year will get $\frac{1}{2}$ the rate to stockholders.
 - D. Dividends that have accrued to employees will be distributed once a year in December, except that dividends for the year 1915 will be distributed in January, 1916.
3. No person will be entitled to a share in these dividends unless he is a bona fide employee of the Company in good standing at the time of their distribution; except that employees laid off owing to lack of work or sickness will be entitled to the dividends accruing in any year on the wages earned by them during the twelve months ending June thirtieth of that year.
4. Employees voluntarily leaving the service of the Company, or dismissed, or discharged, will forfeit their right to any accrued dividends.
5. Any employee who may receive a commission from the Company or any share in the profits other than as provided for in this plan (except thru dividends on stock if a stockholder) shall thereby be rendered ineligible to receive dividends under this plan.
6. All employees—except those noted in the three preceding sections—shall be eligible to share in dividends under this plan.
7. The above plan for division of profits is purely voluntary on the part of the Company and is in no sense a contract. The right is therefore reserved to the directors to make at any time, without restriction, such changes in the plan as they may consider desirable for the best interests of the organization. The fact that any employee is receiving the benefits of this plan shall not deprive the Company of the right at any time to discharge such employee and thereby terminate his participation under the plan, nor shall any employee acquire any right thereunder to any accounting by the Company concerning its business or profits.

C·T·D·IMMORTALS

STAND back a little please. There is plenty of him to go around so that none will be disappointed.

You will note from the attached daguerreotype that our pleadings for a full length 'portrait were in vain. But close examination of the subject will disclose a very classy stream-line effect extending from the chin downward and outward. Imagination will fill in the remainder of the picture. But imagination can only give you a hint of the cherubic smile which usually lights "Billy's" face. Sitting for a portrait is one serious matter, let me tell you.

Like all successful men Bill started in life while quite young.

Full fourteen summers ago he introduced himself to the admiring throng as our office boy. But he quickly lived that down, and because of his preternatural knowledge of drilling affairs—no one knows where he got it, but he did—he was unanimously elected Chief Custodian of the Stock Book.

Then, one day, he came down with a grip—yes, most everyone has it this month—and forthwith filled the grip with reamers and drills and an extra pair of socks. He had decided to go on the road. There seemed to be no way to stop him, so we agreed to pay his fare as far as the sea-board. That was a bad error, for Bill stayed on the sea-board and has been boarding there ever since. He says the board is good and he looks it. All these years his supply of friends and orders has been constantly increasing by geometric progression—'cause Bill's the sort of fellow who makes a whole crop of both grow on the same bush. His great store of real, practical knowledge concerning drills and their distribution makes him a valuable ally in the trade, and Bill is ever true to his trust.

Professor, if you will just turn the calcium glare this way, we will introduce to you Brother William E. Caldwell, of the City of Brotherly Love—alias Philadelphia, Pa.



No.
930



H. S.
Paragon
Forges
Drill
Holds
World
Drilling

THE PARAGON DRILL



INCREASED hole production is assured by the use of "Paragon" High Speed Drills. These drills are hot-forged, without weld or joint, in special dies from the original flat bar. The flutes are scientifically shaped, with straight cutting lips and the maximum chip area. ¶ As the strain of driving is brought, by our specially designed "Paragon" sockets, to the large end of the shank where it has the greatest cross-sectional area, the "Paragon" Drill has an exceptionally strong and durable drive. ¶ The world's drilling record (57½ inches per minute thru cast iron) is held by a 1¼ -inch Paragon Drill.



THE CLEVELAND TWIST DRILL CO.
CLEVELAND

CHICAGO: 9 NORTH JEFFERSON ST.

NEW YORK: 30 READE ST.

CHEER up. We have disposed of the inspiring little verselet which usually reposes snugly within this space.

As a cheering thought for you to take home with you this evening, my friends, let me add that our next issue of Drill Chips will not appear for a whole three hundred and forty-eight hours.

So cogitate on this vast lapse of time in which you will have complete peace of mind, such as is enjoyed by every man who drills with "Cleveland" drills.



Tech.

3



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(Cleveland)

FOR MARCH

VFA

The Perfume Of Pork
Is Abroad In The Land

"Could Carbon Drills Do It? Ask Us."



THE CLEVELAND TWIST DRILL CO.

C. H. Handerson, Editor


ETHICS are cute little things that make our wives wear furs in August and skimpy skirts in March. Ethics put three buttons on pajamas and ten precepts in the commandments. They are hoary-headed bits of ether founded on the rock of common sense and they rule the world—congress to the contrary. They are also very sensitive to abuse and once broken have a back-kick like Theda Bara in the last act.

There is a temptation nowadays to develop a temporary forgetfulness of Business Ethic Number 1 on page 43—i. e. the old Customer First. One may be a right reputable manufacturer and go to church every Sunday and take the discounts right smack on the 10th and brush one's molars twice daily, exactly as per instructions on the rear cover of the Homely Ladies' Journal—but still there lurks that temptation to jump over the windshield and go a-flirting with luscious business brunettes in foreign pastures, leaving Mrs. Old Customer alone in the back seat shooting sparks into the upholstery.

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<p>No. 106</p> <p>Taper Shank Carbon Drills Economical In Drilling Large Holes</p>	<p>No. 12</p> <p>Carbon Three Fluted Drill For Punched and Cored Holes</p>	<p>No. 108-A</p> <p>Small Carbon Straight Shank Drills for H. S. Sensitive Drilling</p>	<p>No. 91</p> <p>Carbon Oil Tube Drills for Hard Metal Drilling</p>	<p>No. 150-A</p> <p>Taper Shank Carbon Bridge Reamer for Economical Reaming</p>	<p>No. 444</p> <p>H. S. Bonding Drills Particularly for Open Hearth Rails</p>	<p>No. 930</p> <p>H. S. Patented Forged Drills World's Drilling</p>
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Even as the grass across the street seems greener and the other end of the roller towel seems cleaner, so apparently seems a slice of foreign trade far sweeter than an equal slice from home and mother.

Now maybe the editor, being only an editor with ink bespattered ears, has no right to personal feeling on the subject, and maybe we are not as punctual of a morning as the boss might like to have us, but none the less we take a bit of just joy in the fact that at the  ranch there are no war babies clogging up the nursery. Every ounce of our output is sticking right tight to the old-time pastures and the primary ethic of business is still hale and hearty here. No 'tain't cause we haven't had the chance. My goodness no, child! Juicy looking war orders have been served up to us good and plenty with delicious golden mayonnaise dressing and green-back trimmings. Tempting velvet-lined proffers are our daily untouched food. Rubber-heeled gentry with bulgy pockets have worn a smooth path through our doorway and have gazed hungrily at row on row of highly productive machinery—all plugging away for our old friends. But it nets them naught. We have no war orders today, never did have any, don't want any and don't intend to take any—just like that Samantha!

BRIDGEPORT MANUFACTURING COMPANY, BRIDGEPORT, CONNECTICUT, U.S.A.

Seriously and frankly, friends, we are devoting every inch of space and every spindle in the place to the needs of our old customers before all others. Our every facility for service is at your disposal alone. You are the men who made us what we are, and we are not ashamed to admit it. We see no reason, therefore, for turning now from the hand that fed us in youth to the metal mits of Europe.

'Tis true that for years we have been exceedingly progressive in foreign markets and we are still caring for our old customers in distant parts. But while the present pressure continues, we are playing no favorites and seeking no new customers of foreign address. We're only sticking to the old time ethics of business and to our pals of years' standing.



WHERE CAN I USE CARBON TO REPLACE HIGH SPEED DRILLS?

By E. C. PECK, Gen'l Supt.

THERE are conditions under which an attempt to use H.S. Drills will be not only an uneconomical proposition, but in some cases a downright waste of money.

To be at their best, H. S. Drills must operate at high speed. Therefore, in our judgment, it is entirely wrong to expect H. S. Drills to give satisfaction when operating at either low or medium speeds. The lack of economy in the use of H. S. Drills

No. 106
Taper Shank Carbon Drills Economical In Drilling Large Holes

No. 12
Carbon Three Fluted Drill For Punched and Cored Holes

No. 108-A
Small Carbon Straight Shank Drills for H. S. Sensitive Drilling

No. 91
Carbon Oil Tube Drills for Hard Metal Drilling

No. 150-A
Taper Shank Carbon Bridge Reamer for Economical Reaming

No. 444
H. S. Bonding Drills Particularly for Open Hearth Rails

No. 930
H. S. Paragon Forged Drills Hold World's Drilling Record

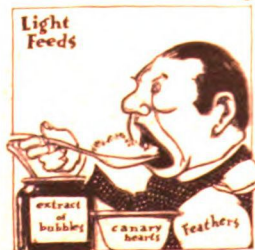
is due mostly to breaking, and the feed is—in all cases except accidents—the cause of this breakage. It follows that light feeds should be used. The ideal condition is light feed and high speed and we cannot lay too much stress on this fact.

It is well-known that a slow-running drill press with a heavy feed is in the worst condition possible for economical drilling. It is also in the best condition to break drills, due to the lack of rigidity in the drill press to resist the action of the feed pressure.

As often pointed out, when a drill starts to work it will not penetrate the work until all the spring has been overcome. The drill then operates at the feed for which it is geared until the point meets a blowhole or emerges from the bottom of the work. Then all of the accumulated feed or spring acts to greatly increase the feed—which breaks the drill.

The art of making H. S. Steel at the present time has not advanced sufficiently to enable the steel maker to produce small bars of H. S. Steel with the same amounts of tungsten and carbon as in the larger bars. This means roughly that the smaller the drill, the less carbon and tungsten it will have. It also

means that the efficiency of the drill for high speed is materially reduced. This first becomes noticeable at $\frac{1}{4}$ inch. Drills smaller than $\frac{1}{4}$ inch rapidly fall off in their efficiency as H. S. tools,



so that the $\frac{1}{8}$ -inch H. S. Drill, for all around purposes, is only slightly better than carbon and in still smaller sizes we have not found, in our own practice, that the H. S. Drill is any better.

It must also be taken into account that all drill presses, for drills $\frac{1}{4}$ -inch and smaller in diameter, are strong enough to break the drills, and even if the analysis of the steel in smaller sizes *could* be gotten the same as in the larger, there would still be a larger percentage of breakage; for the higher tungsten and carbon content would increase the brittleness of the tool so that almost any drill press would easily break it.

From all of the foregoing it must be evident that if we cannot get at least 60 feet a minute—peripheral speed—with light feed and no spring, we are not getting the most value for the money expended for H. S. Drills. If drilling machines are such that 40 feet per minute—peripheral speed—is all that they will pull, then carbon drills will most likely prove more economical. We would venture an opinion that one-half of the work at the present time, on which H. S. Drills under $\frac{5}{32}$ inch are used, could be done as economically with carbon drills.

Only yesterday came word from a large Eastern user of small-sized high speed drills concerning his adaptation of carbon steel drills to high speed use. They were right "up against it" for high speed drills and their experience with some high speed drills, made from some of the high speed steel which is being produced



No.
12



Carbon
Three
Fluted
Drill
For
Punched
and
Cored
Holes



No.
108-A



Small
Carbon
Straight
Shank
Drills
for
H. S. Sen-
sitive
Drilling



No.
91



Carbon
Oil
Tube
Drills
for
Hard
Metal
Drilling



No.
150-A



Taper
Shank
Carbon
Bridge
Reamer
for
Economical
Reaming



No.
444



H. S.
Bonding
Drills
Particu-
larly
for
Open
Hearth
Rails



No.
930



H. S.
Paragon
Forged
Drills
World's
Drilling
Tool

under the pressure of the present times, was both expensive and discouraging.

As a final resort they decided to test our suggestion to use "Cleveland" carbon drills at speeds in excess of those at which their high speed drills had been running.

Result:—greatly increased production with a greatly reduced cost per hole as well, illustrating very aptly one of the places where carbon drills can replace high speed drills to the great benefit of the user.



ARMS AND THE MAN

A GAUNT, grim, scantling-like Amazon marches primly into the room, and school has begun. The guileless little children join in executing the classic entitled "Oh How We Love Our Teacher." So in youth do we start the business of the day with a lie upon our lips, and as grown-ups we continue to exhibit an ever lessening love for authority in any form—thereby proving for the millionth time that "as the twig is bent so doth the tree incline."

Nowadays the darling baby boy, about the time he cuts his low-speed teeth, begins to tell mere Pa and Ma about where they may alight, and by his sixteenth year he is running an automobile and the



balance of the family circle to boot. Ere his nicked jowl displays traces of early tonsorial experiments, he professes to have obtained a strangle-hold on the earth; at twenty-one he assumes the title of "Citizen" with a firm conviction that he,

as an individual, is of far greater importance than society or the nation as a whole.

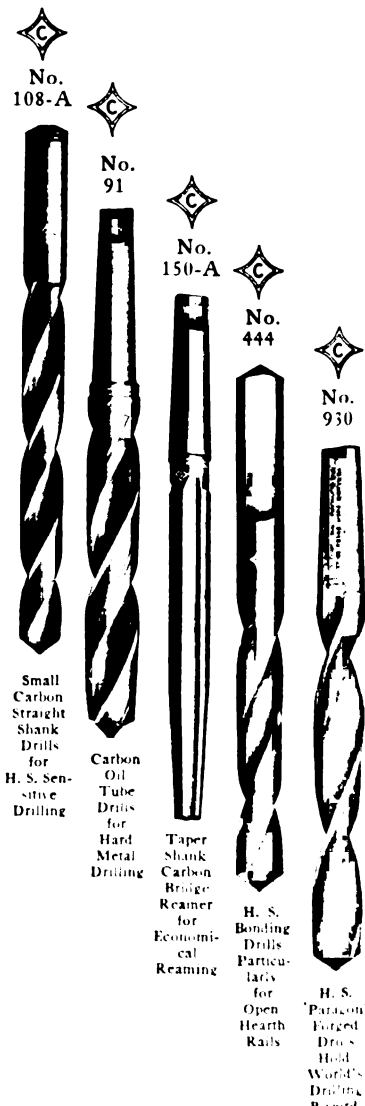
Yes, and then the immigrants come, and are caught in the swirl of our tempestuous life to be dragged down and lost in the undertow. Their children rise laughing at the stupidity of their parents. Those old-world customs and manners and traditions are thrown off like worn clothing and with them goes the last vestige of parental discipline. The child rushes alone into the gaping streets of life—his own master and the pilot of a wild and rudderless ship—himself.

Disaster? Of a certainty, and is it any wonder when even the tamest mud-scow needs a practiced hand at the tiller. The gunman and the "dip" of the slum are the result of a degeneracy fostered by untutored wills and reinless passions.

And so, be these children high or low in station, they spring to their parts in the play of life, untaught the vital lessons of discipline and fealty. So why show any wonder that the duties of citizenship are scoffed at and its burdens complained of? The price that bought this citizenship is forgotten. It seems a free thing like water or like air. It is something that even the poorest may possess and as a result is valued at naught.

In the fall we plod wearily to the voting booth there to mark and otherwise mutilate a spotless and quite helpless roll of pianola music (recognized by the real insiders as a ballot.) This task completed the onerous duties of citizenship are forgotten and again the individual reigns unchallenged by the cry of country for another twelve month or more.

Oh, it brings tears to our eyes to see our sparkling manhood worn so by the responsibilities of this thing—citizenship! Its weight is suspiciously reminiscent of the specific gravity common to a dozen frog's hairs, a



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pint of peacock's brains or a caterpillar's cough. The net result of the microscopic load of responsibility imposed by our citizenship is an equally microscopic modicum of interest in and respect for citizenship.

Come now, is old Europa so far wrong when she accuses us of sacrificing all to the individualistic god of commercialism? The burdens of our citizenship in truth do seem to hang very lightly. (Even the editor, brazen as he must be to be an editor, blushes to think of his sins of omission along this line of endeavor.)

We are supposed to be democratic, yet we are becoming more and more the logical prey for some sort of despotism, because we value our franchise so little that it would be well nigh a relief to be loosed from the cobweb bonds of its authority.

Uncle Samuel, methinks you can never develop a unified, true nationalism devoid of all sectionalisms and selfish individualisms until every round-shouldered hod-carrier and upholstered railroad magnate alike feel the load of citizenship a trifle, and delight in the responsibility which it imposes. Until citizenship means more than a carelessly cast ballot thrown into an ocean of like ballots it can compete but weakly with the call of the individual's God of Mammon.

But perhaps the danger is not apparent to you, yet what was it shook stolid England to her foundation but a few short weeks ago. It was a crisis of labor at a time when, if its purpose had been consummated, it would have presaged utter national disaster—and this is but a single case in point illustrating the inherent dangers of individualism on a rampage and self before nation. That same link is missing in the English form of government which is missing in our own—it is the link that brings the nation near and makes it dear and gives it the support of its citizens even at the expense of their personal liberty and convenience.

Say what you will of Germany, it has a franchise to confer that is prized, and prized because of the price, the sacrifice which it demands. There government seems a live and pulsing thing. They feel it and see it and touch it daily. It imposes duties and reaps

respect. Its citizenship is valued because of the obligation it brings with it, for we value all things by the price we pay to get them. The savage places no worth upon the diamond, because he does not know its price and, likewise, neither can we place a true valuation upon our citizenship until it demands a greater return from us in exchange for the benefits it bestows. Citizenship is too easily obtained and therefore lacks value with its attendant authority.

To quote Kipling—we "don't obey no orders unless they is our own" and, though professedly democratic, we have a fine contempt for the mass and think ourselves as surely members of a class as any Brahmin or Manchu. As a result our government is losing the fundamentals of its democracy in the present day struggle of the individual for aggrandizement.

Rightly you ask for a remedy. There may be many of them and perhaps not the least of all is compulsory military training. It may be that we are wrong in so suggesting, but let's look further into it before deciding.

Compulsory military training means for us no standing army of vast and dangerous proportions, it means no conscription and no militarism. No. Aside from the enormous strategic value of the citizen soldiery trained and subject to discipline in time of stress, compulsory military training, experienced during the formative period of a youth's life—just before he must become a producing unit—would tend to immeasurably strengthen him morally, mentally and physically. It would make him amenable to discipline and would make him recognize the need for and the value of authority and obedience. He of the class would meet the mass on terms of strictest equality and both mass and class would come

to appreciate that birth is an incident, that environment is a happenstance and that character, regardless of caste, is the real keystone of the nation. The present testy spirit of competition would be forged to a finer understanding of the beauties of co-operation by the wholesome leavening influence of camp life. Physical well-being, poise, stamina would be developed to form a firm foundation for mental growth, and throughout the entire process citi-



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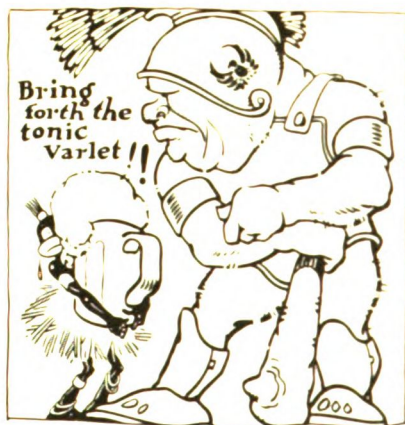
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zenship and the protection which it brings would become a thing bought and paid for and hence valued at its true worth.

To bring about such a training would be a task that would set Hercules himself to taking tonics in preparation for the deed. Yet once done there would be no complaint. We hear none from Australia or Switzerland. An innovation is fought only until it becomes a fact, then opposition fades in the light of progress. Men have fought the introduction of almost every new thing.

Yet these things are all here and we have no present complaint. Habit and custom make molehills of mighty mountains. Therefore it seems reasonable to believe that after a generation or two of military training it would no longer be an innovation, it would no longer be fought, it would be as acceptable as the telephone, the railroad or the street car.

Are we wrong when we say that the all-devouring commercialism of the day must be curbed if we are to present an impregnable front to the assaults of future years? Are we wrong when we say that mass and class, labor and capital, creed and color, politics and people must unite into a common one-ness—in a purged and purified democracy—if our form of government is to withstand the acid test of time?



PORK, PATRIOTISM AND PREPAREDNESS

DOWN in Washington there are a bevy of very astute and perspicacious gentlemen, who have their senatorial ears worn smooth from much holding to the ground. Their respected noses are always agog to test the aroma in the wind and today the seductive redolence of pork glides down the breezes from the middle west. So strong and fragrant is its perfume that it hides the smell of burning powder from o'er the sea with the awful tale which it tells concerning the fate of the unprepared.

Preparedness of a permanent and adequate sort has been and may still be in danger of succumbing to the overpowering odor of Pork—and this, mind you, with no reflection on said Senators. The guilty ones are our dear selves west of the Alleghenies. We have nearly sold our birth-right for a mess of pork pottage. While preparedness hung fire, we disciples of Nero fiddled around and by our silence gave consent to the routine method of appeasing our political appetites—i. e. pork.



A senator is human, and like a human he reasons, "I scent no fragrance in the wind from my district indicative of a burning desire for this thing called "preparedness", ergo my dear people wish me to proceed as per usual, which consists of a couple of cute court houses and the annual dredging of Kingdom Creek. This being accomplished, they will rejoice and I need not fear the fall election." Last week, mind you, he received 367 letters from the immediate neighborhood of Thompkin's Cemetery, each demanding a modern new Tiffany drinking fountain for the public park. The din was terrific. In view of the silence from the forces of preparedness, it completely overawed him, and he believed that drinking fountain to be the one and only key to his political salvation. We cannot blame Mr. Senator, for we have left him in ignorance of this new-created desire of ours.

Mr. Sherwood of our own buxom state, according to "Puck", prostitutes preparedness by exclaiming, "Preparedness by all means, if we can have a five million dollar government munitions conservatory in Ohio." He is interpreting this issue as we have taught him to interpret all issues, if possible, from the beginning of Senatorial time—in terms of pork. Judged by past standards, he is doing his duty. His error is the result only of custom and silence.

What we mid-westerners need is a voice so loud and unmistakable in its portent that there can never again be a mistranslation of its meaning or a misconstruction of its goal. Believe me, the very minute that we cry for less



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pork and more preparedness of a permanent and adequate sort, that minute will the frock-coated folk deliver the meal as ordered.

England paid the price of unpreparedness. France paid, Russia paid. Belgium paid. We will pay. The law is immutable. History is the greatest little repeater in the precincts of time.

Our luke-warm attitude toward preparedness stands as an indictment against the patriotism of the mid-west. Our silence has been damning evidence of our lack of interest in the uppermost issue of the century, and ye editor is as guilty as the guiltiest.

We, for one, have hesitated long enough. The first issues of this pocket pick-axe are going to a place where they may slightly alter the pork-tinged flavor of the zephyrs from Ohio. Most of them will bear an address "Washington, D. C." and will announce that we are in favor of preparedness for better or for worse until death do us part. Will you as a voter and ultimate totter of the gun do likewise? Have a heart and leave us not stranded and naked in the august presence of the Senators. Write today to the Senator from your State—address him at Washington and, if you do not know his name, call him "The Senator from your State". Tell him that you are forevermore completely divorced from the pork diet until he can show that the new Court House on the south side of the park will never be transformed into an abode for alien troopers nor its copper gutters hocked for a nation's ransom.

The most effective opponents of preparedness is the man who keeps silent.



Staff Special—Allah be praised for the "Indians" are sold at last! You may not know it, but the "Indians" are the Cleveland baseball club. Few people knew we had one. Fact is we'd nearly forgotten it ourselves. The dead are soon forgotten. They were sold to a man named Dunn. We pause to wonder if it's a case of Dunn getting done. Drive on Hortense, drive on.





C. T. D. IMMORTALS

THE next number this evening is labeled "The Human Alarm Clock" alias 'Big Ben' Boltey, alias 'Dick,' the only living salesman who can call on a superintendent at 6 A.M. and survive the exertion."

Thirty odd annums ago he moved in with a new lathe. Inside of thirty minutes had the dinged thing eating out of his hand and standing on its hind legs for him. Any man who can do that is worth annexing permanently. We did it—fortunately. Dick never faltered in his rise toward the roof. On arrival in those exalted parts, he was duly christened "Knight of the Pullman Parlors." But avast—Dick is no parlor salesman, take it from Mother. Any old time at all he can run out into a shop and detach the monkey-shines from a monkey wrench or from a multiple spindle automatic, with equal aplomb. We believe that his training in driving his famous Ford for the last six years renders him capable of most any supernatural mechanical trick, not the least of which is the complete reversal of

Pa Time's machinery—an act which enables Dick to remain at the same apparent age for years at a stretch. Dick is also some people when he listeth—his impersonations are dangerously lifelike. Only recently he left Mr. Cox a nervous wreck in a vain effort to find out which self was himself. Talk with Dick for three minutes and he can forthwith deliver you a multigraphed copy of yourself and this with nothing up his sleeves but his Porous Knit. Unfortunately he had his physiognomy photoed in his Sunday suit. That's the only underhanded trick Dick ever turned in all his life. We did not feel it right to let him pawn himself off as a clothing ad so we attach another photo as he is when cleared for action in the pose of a Dutch Cleanser damsel.

Professor kindly entune "It's a Long Way to Tipperary" for Richard is coming.



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DRILL CHIPS' TABLE of DRILLS AND TAPER PIN SIZES



No. of Pin	Length in Inches	Large Diameter in Inches	Small Diameter in Inches	Size Drill to Leave Stock for Reaming Pin Hole:		No. of Pin	Length in Inches	Large Diameter in Inches	Small Diameter in Inches	Size Drill to Leave Stock for Reaming Pin Hole:	
				At Center	At Point					At Center	At Point
0	3/4	.156	.1404	28	29	8	1 1/4	.492	.466		
0	1	.156	.1352	29	30	8	1 1/2	.492	.468		
1	3/4	.172	.1564	22	24	8	1 3/4	.492	.455		
1	1	.172	.1512	24	27	8	2	.492	.450		
1	1 1/4	.172	.146	24	28	8	2 1/4	.492	.445		
2	3/4	.193	.1774	16	17	8	2 1/2	.492	.439		
2	1	.193	.1722	17	18	8	2 3/4	.492	.442		
2	1 1/4	.193	.167	17	20	8	3	.492	.429		
2	1 1/2	.193	.1618	18	21	8	3 1/4	.492	.424		
3	3/4	.219	.2034	6	7	8	3 1/2	.492	.419		
3	1	.219	.1982	7	9	8	3 3/4	.492	.419		
3	1 1/4	.219	.193	8	11	8	4	.492	.408		
3	1 1/2	.219	.1878	9	13	8	4 1/4	.492	.403		
3	1 3/4	.219	.1825	10	15	8	4 1/2	.492	.402		
4	3/4	.250	.2344	4 1/2	1	9	1 1/2	.591	.559		
4	1	.250	.2292	4 1/2	1	9	1 3/4	.591	.545		
4	1 1/4	.250	.224	1	3	9	2	.591	.543		
4	1 1/2	.250	.2187	1	3	9	2 1/4	.591	.541		
4	1 3/4	.250	.2135	1	4	9	2 1/2	.591	.539		
4	2	.250	.2083	2	5	9	2 3/4	.591	.537		
5	3/4	.289	.2734	1	1	9	3	.591	.535		
5	1	.289	.2682	1	1	9	3 1/4	.591	.534		
5	1 1/4	.289	.263	1	1	9	3 1/2	.591	.518		
5	1 1/2	.289	.2577	1	1	9	3 3/4	.591	.519		
5	1 3/4	.289	.2525	1	1	9	4	.591	.507		
5	2	.289	.2473	1	1	9	4 1/4	.591	.504		
5	2 1/4	.289	.2421	1	1	9	4 1/2	.591	.497		
6	3/4	.341	.3254	P	P	9	4 3/4	.591	.492		
6	1	.341	.3201	P	P	9	5	.591	.488		
6	1 1/4	.341	.315	O	O	9	5 1/4	.591	.486		
6	1 1/2	.341	.310	O	O	9	5 1/2	.591	.484		
6	1 3/4	.341	.3045	O	O	10	1 1/2	.706	.674		
6	2	.341	.2994	O	O	10	1 3/4	.706	.669		
6	2 1/4	.341	.2941	O	O	10	2	.706	.664		
6	2 1/2	.341	.2880	N	N	10	2 1/4	.706	.659		
6	2 3/4	.341	.2837	N	N	10	2 1/2	.706	.654		
6	3	.341	.2785	N	N	10	2 3/4	.706	.648		
6	3 1/4	.341	.2733	N	N	10	3	.706	.643		
7	1	.409	.3881	H	H	10	3 1/4	.706	.638		
7	1 1/4	.409	.3829	W	W	10	3 1/2	.706	.633		
7	1 1/2	.409	.3777	W	W	10	3 3/4	.706	.628		
7	1 3/4	.409	.3725	W	W	10	4	.706	.623		
7	2	.409	.3673	V	V	10	4 1/4	.706	.617		
7	2 1/4	.409	.3621	V	V	10	4 1/2	.706	.612		
7	2 1/2	.409	.3569	V	V	10	4 3/4	.706	.607		
7	2 3/4	.409	.3517	U	U	10	5	.706	.601		
7	3	.409	.3465	U	U	10	5 1/4	.706	.596		
7	3 1/4	.409	.3413	U	U	10	5 1/2	.706	.591		
7	3 1/2	.409	.3361	U	U	10	5 3/4	.706	.586		
7	3 3/4	.409	.3309	T	T	10	6	.706	.581		

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I wish every
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could read the first
article in this issue
J. P. Cox.

WHEN we build, let us think that we build forever. Let it not be for present delight, nor for present use alone. Let it be such work as our descendants will thank us for, and let us think, as we lay stone on stone, that a time is to come when those stones will be held sacred because our hands have touched them, and that men will say as they look upon the labor and wrought substance of them, "See! This our fathers, did for us."

—Ruskin



C. H. Handerson, Editor

IN the roseate morning and at night, in the afternoon and in the forenoon, we hear of "Preparedness." Always it is "Preparedness." Forsooth, the word will soon become overworked and unpopular like "efficiency", and then perhaps we'll have to hunt a new toy. But, before that day comes, let us hope that someone will arise and point out what *really* constitutes "preparedness." As yet no one seems to have defined it correctly. Like the terms "good" and "evil" its meaning varies with clime and country, age and sex—"preparedness" in Germany is rank militarism here, and "preparedness" here would be suicide in Belgium. And so it goes. Yet regardless of its gradations of meaning, preparedness has a single basic meaning that we, here in the Land of the Free, seem to have completely overlooked.

Millions of men and billions of dollars are daily juggled in the public print in an effort to tell us what this thing "preparedness" may be. Men of note speak at length in terms of battleships



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and cruisers, regiments and guns, aeroplanes and submersibles and think they define "preparedness." They do not. They do not touch a fraction of the real meaning behind this mystic word. It is high time that the press of this country undertook the task of teaching us that guns and men, ships and soldiers and all the panoply of war mean absolutely nothing unless they have behind them a *real preparedness*. Now what is "*real preparedness*?"

Old Bonaparte said something, when he pulled off that crack about an army traveling on its "tummy." Modern practice expands Napoleon's phrase to include not food stuffs alone, but an inconceivable array of materials, each in itself absolutely vital to the success of the armed forces of land or sea. Individual personal valor is today a thing of minor value. Battles are no longer swung by gilded generals astride dashing chargers. Superior gunnery and superior masses of men *per se* are nothing now, unless, away back over the rim of the world, far from the clouds of battle, there are thousands of sweating men working in the factories, in the locomotive cabs, about the oil wells and in the coal mines. The poetry is all gone from victory—today it is a sordid, sweaty thing, the result not of heroes' blood alone, but of heroes' blood mixed part for part with salty sweat. The man behind the gun today is not the

soul-stirring figure of Revolutionary days, but a grease-stained engineer or quiet business man, busy weaving the mantle of victory from millions of threads gathered from every township in the country and debouched upon the field of battle as munitions, bandages, automobiles, gasoline, food and clothing, coal and chemicals—and so on through all the alphabet of supplies. Without the support of the toil-stained veterans of the shop, those million men and those mammoth battleships are as so much junk.

This, sir, is the salient fact which we have overlooked in striving to define our preparedness. In typical American haste and enthusiasm, we have adopted this preparedness child as the companion of our hearth, forgetful of its appetite for food, raiment and a gigantic flood of militant toys. This army and this navy that we would have are like the point of a drill, which meets the wall of metal, battles with it, conquers it and emerges victorious—but emerges victorious, only if behind it are a powerful machine, the belting, the line shafts, the engine and the engineer with his hoard of helpers, all working in perfect unison for a similar end—the victory of that drill point. And in that victory the drill-point is only the instrument. Its ultimate success depends on a stream of hidden things working away deep in the bowels of the factory. Likewise are our army and navy but instruments or agents, whose

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every act and final victory hang upon forces unseen and unheralded.

Have we made clear what we consider to be *real* preparedness? Yet why has so little been said about these indispensable and unseen factors? Perhaps it is because the popular view contains all the poetry of preparedness. Perhaps it is because this unseen side calls up no visions of military bands, no flapping flags, no martial scenes and holiday hurrah, but rather the unpoetic vision of the sweaty backs of labor. Yes, and perhaps there is another reason—

They say that a business is but the lengthened shadow of the owner. So why may not our present and popular impression of what constitutes preparedness be but the lengthened shadow of one of the leaders in this propaganda—Secretary Daniels? A nation is, after all, but an enlarged business organization. Mr. Daniels has knowingly or unknowingly completely befogged the issue, and has done much to popularize the feeling that preparedness is merely a process of piling battleship on battleship and battalion on battalion.

Recently he is reported to have said, "I take the position that the Government should be in a position to manufacture every war implement and war munition, for two reasons: first, control of and economy of preparation; and second, the elimination of *the incentive of the dollar-making individuals* to urge the nation to war." The italics are our own, as we will refer to them again. This statement seemingly discloses a sad hiatus in the Secretary's

mental machinery, for in it he apparently considers war to be a matter of munitions alone. He apparently forgets the need of trains for transportation and for hospital use; he forgets the need of bandages, of automobiles, of chemicals, of gasoline, of food, of auxiliary ships—he forgets the need of hundreds of things, each as indispensable to successful combat as are his munitions themselves. Why does he claim only *munitions* for the Government since the manufacturers of *all* the above materials are as likely to gain from war as are the munition makers? Why not make the Government the sole and only manufacturer of *all* these things and let it own the railroads and the farm lands, and so on *ad infinitum*, since to do so would only be carrying Mr. Daniels' thought to its logical conclusion?

But let's meet Mr. Daniels face to face on the subject of Government munition manufacturing alone. As The American Machinist points out, in event of a real respectable war, we should need 120 times our present force of workmen in the Government arsenals and 120 times our present number of machines fitted and instantly ready for munition manufacture. Yes, more than that—we should need one man sweating in a factory for every soldier and sailor at the front. If we plan an army of a million men, we must also plan another army of a million men to support the million in the field. Our total unpreparedness from the standpoint of munition manufacture only is well illustrated by our Frankford Arsenal.

Today the Frankford arsenal is the only one fitted for the making of field-gun ammunition,



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Record

and, if it worked night and day for one year, it might be able to supply just about enough shells for a *single day's shooting*. In other words, we might roughly compute, that in event of war, to supply ammunition for field-guns alone, we should need 365 arsenals, each the duplicate of Frankford. Now bear in mind that we are meeting Mr. Daniels on his own ground in this, and are pretending for the moment that war is a matter of munitions only, as he apparently would have us believe.

Now then, where in Heaven's name does the Government think it could obtain at a moment's notice—or at a year's notice for that matter—the shops, the machines and the men trained to manufacture 365 shells for every one we now make? Munitions and guns can't be extemporized out of the air like rabbits and harps at a spiritualistic seance. Neither can they always be purchased at the declaration of war. Five months is none too long a time to allow for the manufacture of a modern field-gun battery. While we are creating the machinery and training the men to make these things, what will be our fortunes?

You marvel how Germany supplies her needs in this respect. Her readiness to assume the terrific munition drain peculiar to modern warfare was not any miracle, but the logical result of the realization that shells and guns cannot be made in a day by untrained men. Years ago Germany knew how many shells each little machine-shop could make, and then *she gave these shops actual practice in making them*. The dread fear of the "dollar incentive" did not deter her from teaching what she knew to be for the good of the entire people.

A certain true story well illustrates the meaning of real preparedness:

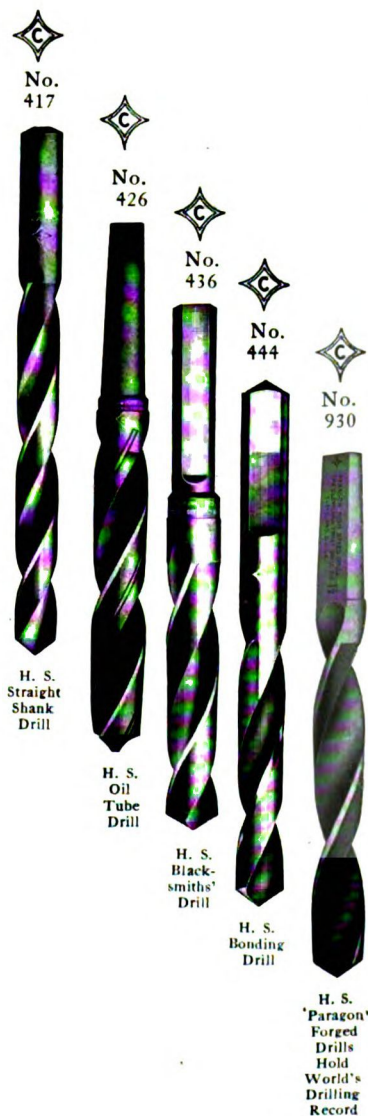
It is the afternoon of July 28th, 1914, in a quiet little German valley. To the right, over there behind that growth of trees where you see the smoke arising, is a huge manufacturing plant, the home of a world-famous ignition system. The noon-day sun is shining down on the peasants at work in the field, and the atmosphere of peaceful industry is everywhere apparent.

But now it is 2:00 o'clock P. M. The telegraph key in the office of that manufacturing plant clicks furiously. War has been declared, and the Nation needs arms and men and needs them quickly!

Now what do you suppose is happening over there in that factory? Is there the fussing and fuming and delay that we witnessed last month down by the Rio Grande? There is not. Is the machinery stopped and the plant shut down? No. The lathes and milling machines hardly hesitate in their whirring, but instead of turning out magnetos, *rifle parts* begin to clatter into the shipping room.

At 2:10 o'clock the employees formed in line and marched by the pay window where each received a little slip of paper bearing exact instructions as to what each individual should do. One-third of them reported immediately at the recruiting station to receive arms and equipment for the front. Another third, according to instructions, reported for duty as expert repairmen on automobile and aeroplane ignition systems, and one-third returned to their lathes and devoted themselves to the manufacture of rifle parts. In short, each man had a preordained duty that fitted cog for cog with the needs of the moment.

How long do you suppose it would take you to change your plant from its present product to the





No. 444



No. 141 Taper
Reaming L



FOR YOUR RO



No. 106 Taper S
Erecting an



No. 150 A Te
Particularly for
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omotive Reamer for
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1916 PROGRAM

Drills for All around
achine-shop Use.

Bridge Reamer
ge and Boiler Work.

will interest you.



No. 112



No.
426



H. S.
Oil
Tube
Drill



No.
436



H. S.
Black-
smiths'
Drill



No.
444



H. S.
Bonding
Drill



No.
930



H. S.
Paragon
Forged
Drills
Hold
World's
Drilling
Record

production of rifle parts? Wouldn't a year be a minute of the time required? Yet over there in that lit valley, one hour's time saw the last magneto rushed shop and the appearance of the first rifle-lock; one hour turned the huge factory from magnetos to war equipment illustrates what we mean by *real* preparedness. Of fixtures and jigs were ready and doubtless had been months or years. Of course the drawings, the plans, and the tools were there ready—prepared. Of course who were delegated to remain at their lathes, knew how to make rifle parts, for they had had experience in making them; the government saw to that. The fear of "dollar incentive" cannot prevent it from teaching them how to serve their country hour of travail.

Instead of eliminating Mr. Daniels' "dollar incentive," let me say to our future Government contractors scattered broadcast among private corporations so that they can find a shop throughout the land and every machinist may recognize a shell, when he meets it. Thus no precious time be lost in tedious introductions when the need shall arise.

But unfortunately our Congressmen are not versed in mechanical. Therefore, to them, the change from the production of magnetos to rifle parts within a single hour's time is like nothing more than a pretty and spectacular bit of magic work. It would be a great service to the Nation, if they would tell them that a change of this nature requires preliminary thought and labor; that jigs and fixtures are not the product of a moment; that designs, blue-prints, and drawings do not grow on trees, and that interchangeability of parts and intelligent inspection are the result of training and inspiration.

Merely taking a census of our manufacturing plants and listing their possibilities as sources of war supply would be useless. If we are to have a real preparedness, our manufacturing plants must be furnished in advance with all those des-

jigs and those gauges for the production of the war materials for which they are best fitted; they must have those blue-prints and those fixtures in readiness, and furthermore, they must be regularly inspected—much as we now inspect our steamboats—to insure their ability to shift from the products of peace to the products of war without any undue heaving or straining. The God of preparedness is propitiated by no mere army and navy. He demands more.

Transportation too is a matter of vital importance to a real preparedness, for what good is an army in Nevada when the enemy beats at the Atlantic seaboard? Preparedness means that the railroads must be very much on the job. Mr. G. D. Dixon, vice-president of the Pennsylvania Railroad, points out that the nation's railroads would have to be regarded and operated as *one* railroad and that the 250,000 miles of steel highway would become the very backbone of victory in event of war. How true that is, and yet how little are we prepared to handle them as a single system or to care for the extraordinary quantity of traffic that would be directed toward strategic points in case of war. The present congested state of our railroads in the East is sufficient proof of our total unpreparedness at this angle. Germany, we are told, had straightaway tracks running from every important center within the Empire to her every frontier. At each frontier terminal were huge unloading platforms—ready, prepared. Yet this is only a single and insufficient example of what preparedness means when applied to railroads.

We would not advocate for our country, tracks dedicated purely to the prospect of future war, but we do believe that, if the Government would cease regarding our railroads as the logical butt of legislative jokes and look upon them as a link and a very important link in the chain of preparedness, the railroads would be financially able to respond with increased facilities to care for the *extraordinary* need—the readiness for which has decided the destiny of many a nation. Less of "Thou shalt not" and more of "Thou may" will do all business a world of good.

From another angle—what is a battleship without an escort of destroyers and auxiliaries? The answer is useless junk. In 1898 and



at Vera Cruz, we found much difficulty with the transportation situation. In 1898 we begged and borrowed transports from the four corners of the globe. We may possibly be able to duplicate the trick again but the odds are against us. When the need for transports arises, the lack of them will seriously and perhaps fatally handicap both army and navy. Suppose, for instance, that a foreign power declared war unexpectedly, and, as an initial step, landed troops within gun-shot of Panama—not a difficult task, let us assure you, when gun-shot today is 15 or 20 miles. Our insufficient garrison there would not be able to hold them, yet, as matters now stand, it would require weeks or even months for us to obtain sufficient transports to carry an army worthy of the name to the scene of battle.

Yet there are men who would legislate the Stars and Stripes from off the sea, and there are those who persistently regard a ship subsidy as an outrageous graft, although preparedness of a genuine sort must have a merchant marine to provide its transports in time of war. This, too, we have forgotten.

And so we might go on concerning our unreadiness in every line of endeavor—iron, steel, chemicals, fertilizers, dye-stuffs, explosives, etc.—but space forbids. As preparedness now stands, we are planning a beautiful protective roof for our Country's mansion—a roof replete with jutting turrets and bristling cannon. But we have forgotten the walls and timbers that must support this roof. Fortunately not all of us have been so forgetful. The National Marine League is alive to the situation and is laboring manfully to correct our erroneous impression of what constitutes preparedness on the seas. There is also The National Security League which is working for a better understanding of the fact that an army is only a veneer, behind which must be muscles and sinews stretching throughout the land, before we can have a true preparedness. We commend both these Leagues to your earnest support.

Perhaps there are others working toward a similar end. We need more. There can never be too many, for the spot-light of publicity must be thrown on the fact that we are building our preparedness upon the quick-sands of unpreparedness; that we are erecting a false front that will fall like a house of cards unless the Government itself unifies and codifies our industries in preparation for war-time needs, and teaches us how to

mobilize these industries—not in a year's time—but in a *day's* time in full preparedness for the inevitable.

RAILS WE HAVE MET

ANY man who has sweated over a track drill will vouch for the statement that some drills slip through as if the rail were made of Schweizer cheese, while at other times the *drill* seems to constitute the cheesy end of the skit. Down the track a little way perhaps Bill or Tom will be galloping along with 300, 400 or 500 holes per grind while you'll be having a tough time to get a baker's dozen holes per grind. Why is it? Maybe you've been cussin' at the *drill*—when as a matter of fact the drill wasn't to blame at all. Lend me your ears a moment—

Being manufacturers of a drill or two ourselves, we have naturally had some mighty interesting experiences with drills—especially with our famous No. 444, $\frac{9}{32}$ " H. S. Bonding drill. This drill was originally designed by our humble selves for the express purpose of making more holes per grind in open hearth rails. Its popularity proves its success, but at first we were amazed at the varying *degrees* of success which attended its use—this in spite of the exceptional safeguards thrown about every step in its manufacture to insure absolute uniformity. At once a thorough investigation was set a-going and the result will interest you.

We found that No. 444 was always the same hole-hungry drill, but that open hearth rails varied—varied very much in fact. If you have ever watched rails in the process of manufacture you'll observe that the ingot after pouring is topped to remove the slag and other impurities which naturally rise to the surface. The ingot is then rolled or hammered into a "bloom," and this "bloom" is divided into five sections. The top section is the "A" section; the next the "B" section and so on down to the bottom or "E" section. From these sections the rails are rolled. Those rolled from the "A" section are called "A" rails; those from the "B" section are called "B" rails, etc. The "A" rails may, at times, contain impurities due to insufficient topping of the ingot.

Carry your investigation further and you'll find that the rail specifications of almost every railroad distinctly state that unless the "A" cut of the ingot comes up to certain tests, it must be discarded, and if it falls below these



No.
444



H. S.
Bonding
Drill



No.
930



H. S.
Paragon
Forged
Drills
Hold
World's
Drilling
Record

standards, *no* "A" rails will be accepted from this "A" cut. Whether or not this "A" cut is discarded, the next cut *must* be known as the "B" cut, and all rails made from this cut will bear the letter "B" stamped upon them just after the name of the maker—and likewise with "C", "D" and "E" rails. You will note too that some railroads do not place even the *acceptable* "A" rails on high speed or passenger tracks owing to the exceptional hardness and brittleness of these "A" rails.

This last fact gave us the clue to why old No. 444 apparently varied so in productivity. A number of actual tests disclosed the fact that any drill, when working on an "A" rail, would produce far fewer holes than when working on any other cut—such as "B", "C", "D" or "E".

Indeed on some "A" rails, even Old Faithful No. 444 itself couldn't squeeze out more than a score of holes without a trip to the grinder, yet when put to work on a "B" rail or a "C" rail, it would reel off several hundred holes without stopping for breath, and this difference appeared even when the *same make* of rail was used.

Now to wrap this all up so that you can carry it easily: Doubtless you yourself have many times condemned a high speed bonding drill to deepest purgatory, when as a matter of fact it was doing nobly for you—considering that it was bucking into an "A" rail. If you had toted that same condemned drill down the track a mile or two and put it to work on a "B" or "C" rail, you'd have had reason to bless its fathers and forefathers before it.

Even the best bonding drill in the world (this being our modest little claim for No. 444) has its hands full when it tackles an "A"-cut rail. Maintenance-of-way engineers who test out bonding drills on "A" rails exclusively are likely to develop a very dubious opinion of the ability of present-day drill manufacturers to make drills "like Mother used to make", but if they would point those self-same drills into a "B", "C", "D" or "E" rail, they would have cause to praise Allah and rejoice and be exceedingly glad, for the results would step up by leaps and bounds.

In short, it's a pretty good system when testing bonding drills to test them on the same rail or on the same type rail. The best of drills, when tested on one of those "A" rails will not do itself justice; it will not show up nearly as well as a comparatively inferior drill working on a "B" rail. As a protection to yourself in selecting bonding drills, look for the rail's initial—"A", "B", "C", "D" or "E"—after the name of the maker on the web of the rail and then you'll know what sort of a rail you've got to play with and can judge your drills accordingly.

C · T · D · IMMORTALS

CERTAINLY he was there—when the Mayflower's keel grounded on our stern and rockbound coast, he was among those present. It's even recorded that the wintry winds of that day did whistle through his whiskers and as mute testimony to this fact, we point to the present denuded condition of his forestry—what greater proof need any man of the ancient and honorable lineage of "H. O."

"H. O." are his initials you know, they do not signify a breakfast food as one might think but the title of "Honorable Oldtimer" conferred on him by the New England States; for "H. O." is the original and only genuine all-wool-and-a-yard-wide Yankee gentleman, and his friends are legion, as it is but natural, you will agree, if you know "H. O."

Be it distinctly understood that the initial "O" belongs to his middle name and is no handle to his last one which, by the way, is Swan. In this bird-like disguise, he has been paddling joyously about his beat from time immemorial, with occasional jumps over the St. Lawrence River for exercise.

Lately he has specialized on—(speak it softly)—garters. Yes sir, they are his boon companions in the chase. A pair of ruby red ones are his present joy and he will display them to all comers who have the price of admission. So step inside, gentlemen, step inside, for "H. O." is worth knowing better.

Mr. W. E. Caldwell, formerly our representative in and about the City of Brotherly Love has forsaken his former lair to assist the Sales Department here at the home office. Mr. H. P. Jensen who has been with us for years in the New York City territory is now the apostle of the "More Holes per Drill" doctrine in Philly and environs. Congratulations are due them both on their advancement.





WHY A GREAT INDUSTRY PREFERS THE PARADOX REAMER

AUTOMOBILE work demands great accuracy, economy and production. Paradox Reamers deliver every one of these qualities—hence their popularity among automobile and other manufacturers with similar reaming problems.



THE PARADOX REAMER IS SOLID
YET EASILY ADJUSTABLE



If Paradox Reamers did not ream as round, as smooth and as straight as a solid reamer, the automobile manufacturers could not use them—as they do.

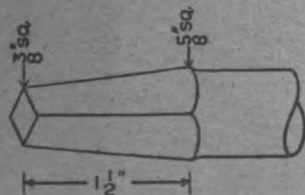
If Paradox Reamers did not ream absolutely true to size, Paradox Reamers could not be used for accurate cylinder-reaming jobs—but they are.

One Paradox body and a single set of blades will ream more accurate holes to a standard gauge than 8 to 10 solid reamers and when the original blades are worn out, they may be replaced by a new set at the cost of the blades alone. *That's true economy.*

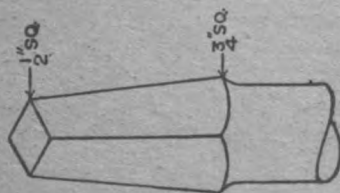
*In writing, please specify Paradox
Catalog No. 388 as we have others*

THE CLEVELAND  TWIST DRILL CO.

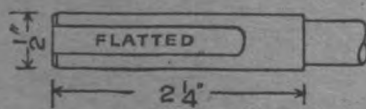
DRILL CHIPS' TABLE of SHANKS FOR TRACK DRILLS



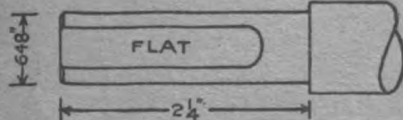
Number 1 Ratchet Shank



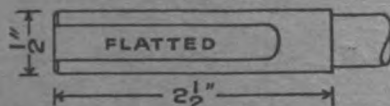
Number 2 Ratchet Shank



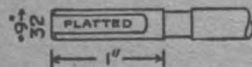
Silver and Deming Shank



The well known Coe Shank
wrongly called 3/8"



Prentice Shank



Number 444 Bonding Drill Shank

NOTE—In ordering track drills, it is advisable to specify the exact type and size of shank required since various track drilling machines are equipped with varied chucks and even the same make of machine may have different chucks, depending upon the preference of the user. Therefore, the exact specification of the size and type shank preferred according to the above chart will avoid all confusion and will greatly facilitate accurate and proper filling of your track drill orders.

Additional copies of this chart on request. Ask for D. C. Chart No. 2



1910
THE NEW YORK
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ASTOR LENOX TILDEN FOUNDATION
5

DRILL CHIPS

For May



Cleveland

VFA

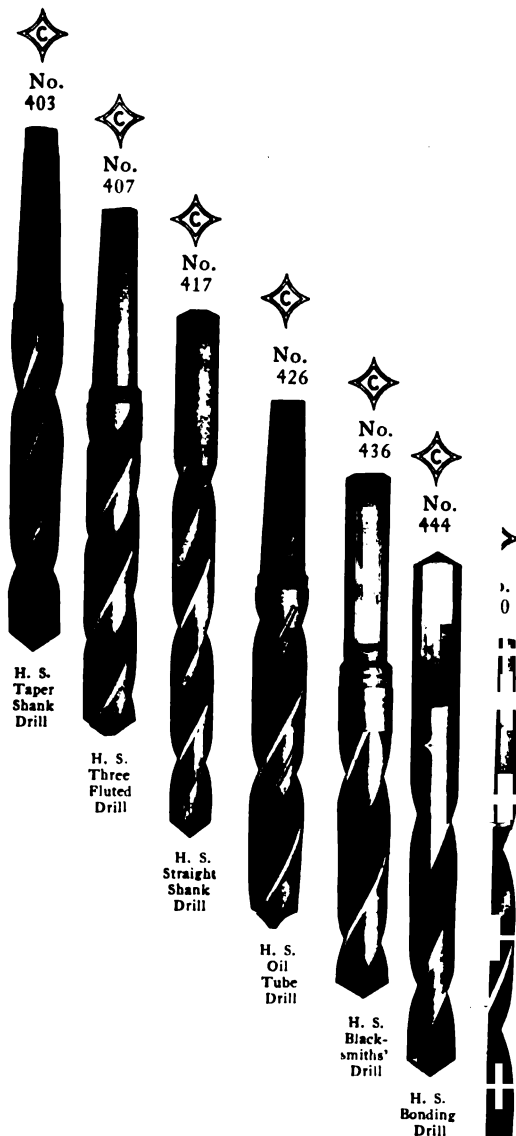
THANK God every morning when you get up that you have something to do which must be done whether you like it or not. Being forced to work, and forced to do your best, will breed in you temperance, self-control, diligence, strength of will, content and a hundred virtues which the idle will never know.—*Kingsley*



C. H. Handerson, Editor

ACROSS the millpond of manufacturing comes the reflection of a cloud—a cloud no larger than a man's hand. Here and there ripples a widening circle where the rain has hit hard, and a distant rumble seems to threaten a nearby storm. Perhaps this incipient storm will end in nothing; perhaps those few scattered complaints concerning the shortage of labor are the result of abnormal conditions only and—perhaps this same sudden shortage carries a more portentous meaning, a meaning that is momentarily muffled by the hum of prosperity. Let us see:

Rumor has it there are some among us, who are planning to tap the profits said to be kicking around the golden streets of Rio and among the plains and plateaus of Peru. Far be it from us to spoil the parade, but, for ourselves, we pause to meditate a moment before we take the leap. The shadow of that cloud upon the labor situation is now no larger than a man's hand, 'tis true—but will it grow? And how will the possibilities of



this growth effect the success or failure of our contemplated venture into the South American field?

The successful handling of this vast foreign trade, with which we conjure so glibly, presupposes an excess of raw materials ready at hand—and the greatest of all our raw materials is the immigrant. He it is who constitutes the units of that ductile mass of labor so indispensable to the large manufacturing enterprise. The immigrant does not jut out from that mass. He is always in step with it and, as a result, the process of production goes smoothly along. He is an ideal atom, but like all other atoms he changes in form and shape and in position. No doubt you have been vaguely aware of the curious change that is taking place? Some twenty-five years since, you will remember, our pay rolls resounded with O'Flannigans, Harrigans and Dugans. Where are those sons of Erin today? Where are the stalwart Scandinavians who followed them some ten years later? Where are all those Polish names that baffled your stenographer ten or a dozen years ago? Today their numbers are in the minority and we see a steadily increasing flavor of southern European and Italian blood trickling into our shops. Where are those immigrants of yesteryear?

No, not all of them are dead—some have become foremen, or owners of little shops of their own, some of them are

dominant factors in larger shops or other business organizations. They have graduated from the ranks of the unskilled mass. They have become inoculated with the initiative of the native American—yes, they have become *Americans* and have evolved from the crude stage of labor to a more highly developed type of skilled or semi-skilled artisan. The process has been continuous. Like the waves of the sea, they swept in and have been absorbed.

Consider the progress of this immigrant as he wanders into the maelstrom of American life to be cast out of the melting pot—no longer a number on the pay roll or a hole in the time clock but an individual American, imaginative, restive, impatient of monotonous labor. As his foot touches our shores, for the first time, his metamorphosis begins, and continues through the months and years upward step by step through the ranks, until he gladly surrenders his place at the more wearisome tasks to the newcomer who has followed him to our shores. But a few years since this immigrant was perfectly content with his role of unskilled worker in some mill or factory. But our night-schools, our libraries and the second-hand knowledge gained from his chil-



No.
403



H. S.
Taper
Shank
Drill



No.
407



H. S.
Three
Fluted
Drill



No.
417



H. S.
Straight
Shank
Drill



No.
426



H. S.
Oil
Tube
Drill



No.
436



H. S.
Black-
smiths'
Drill



No.
444



H. S.
Bonding
Drill

dren's schooling have made him realize the presence of the greater heights and led him to attempt his typical American climb to leadership.

We are all conscious that this interesting absorptive process is taking place, but how many of us realize the swiftness of its action? Today the shortage of unskilled labor in certain sections indicates that the immigrants of 1911-12 and '13 have already become petty sergeants in the army of labor. Three or four years' time seems to have taken the cream of the 1912 and '13 immigrants and pushed them ahead into positions where they are no longer available for labor of the ordinary type—and their shoes are empty. None have arrived to take their places.

The vital point however is, will present conditions continue? Will Europe bar all emigration after the war is over? Will we bar immigration to prevent an influx of so-called undesirables? There is no authoritative answer to these questions, but one thing is obvious—if present conditions *do* continue indefinitely, our problem will not be South American banking nor Chinese credit nor the

beauties of Timbuktú's trade requirements — our problem will be unskilled labor or rather the lack of it; for the gates of Ellis Island are rusting on their hinges, its babel of tongues



is stilled, its empty acres echo to the tread of the lonesome passersby. That mammoth receiving room of our nation, with its daily capacity of 4,000, is now pouring out but the merest fraction of its former wealth into our hopper. The mighty crucible of America is empty, Ellis Island is bankrupt, and our supply of the greatest of all raw materials is cut off.

Another twelvemonth and that cloud may loom more darkly on our horizon and the labor shortage may be still more emphasized. The cry for unskilled labor will then echo to us from many new corners, for then the immigrants of 1914 will be claiming a better ranking than that of private. Another cycle of months or years and these semi-skilled men will become skilled; none will be rushing in to fill their places and the industrial machine will, of necessity, slacken its pace, for it will be like a Venezuelan army of ninety-nine generals and a lean little private—there will not be enough epaulettes to go around.

Having thus entwined ourselves in a dilemma of no mean proportions, it is now our bounden duty to get ourselves out.

The native American imagination has always been stimulated by problems. We have a passion for bearding the impossible to prove that it is bunk. We have even been known to invent wings—regarded as a certain impossibility since the days of Darius Green.



No.
407



H. S.
Three
Fluted
Drill



No.
417



H. S.
Straight
Shank
Drill



No.
426



H. S.
Oil
Tube
Drill



No.
436



H. S.
Black-
smiths'
Drill



No.
444



H. S.
Bonding
Drill

Another problem more or less is of no account. Invention is our hobby. Turn to Secretary Lane's report. If you have not already read it do so, for it gives the lie to all previous governmental reports by reading like one of the Six Best Sellers. In it you will find that the American has produced two-thirds of the epoch-making inventions of the last fifty years. To be exact, of fifty really revolutionary inventions of the last half century, an American name stands opposite thirty-six. Electric furnace reduction, artificial graphite, split phase induction motors, the air brake, electric welding, the automatic knot-tying harvesting machine, barb-wire manufacturing machine, high speed steel, the dry air process for blast furnaces, block signals, Harveyized steel, etc.—American inventions, every one, and each the solution of a knotty problem.

Always the American finds a way out and generally he is just lazy enough to find the easiest way out. Since 1776 he has been a Minute Man in the world of invention. When the integrity of the Nation hung on a thread, the Monitor slid into Hampton Roads; when mechanical flight had been proven an impossibility by all the laws of physics and mathematics, an American-built machine took an American to the skies. When the mighty reaches of the harvest field challenged us, the gang plow, the harvesting machine and the mechanical ditch digger sprang into existence. Acres of streets laughed at the hand broom, and the power sweeper appeared. Give a woman a hairpin and a pair of second-rate manicure scissors and 'tis said she will wreck an empire. But give an American a problem—be it physical or metaphysical—and he will solve it though the gears of the universe be changed in

the process. We believe a threatened crisis in our labor supply would present only another problem and another opportunity for the imagination and mechanical ability of American genius. We believe that we will, if need be, find a solution for such a problem, that machines will be designed and methods developed to double and triple output with no commensurate increase in labor force. We have done the impossible before and we can do it again. But at all costs, that ever-thinning stream of immigration must be conserved, and the same ability that has stored up and conserved the tiny mountain streams for the irrigation of thousands of acres will attack the thinning streams of immigration and turn them likewise into channels more productive than we have heretofore dreamed possible.

And so, as a result of the Hell across the sea, we will find ourselves a better nation—better prepared both for the conquests of war and for the conquests of peace—and a nation dependent on no one for either men or material. The fathers of Gatun can do it, the men who transformed DeLessep's dream into the Panama canal can do it and, if need be, they will.

DO YOU WANT MORE?

Mistakes will happen—even in Drill Chips we occasionally may say something worth repeating. We blushing admit that this seems to have been the case in our April issue when we hazarded a few remarks concerning Preparedness from the industrial standpoint.

We received a regular avalanche of requests for additional copies of this issue—so many that our extra supply of 2,000 proved but a drop in the bucket. But we've had this article reprinted with an exceedingly interesting sequel and will be glad to send as many copies of this reprint as you may desire. How many, please?



No.
417



H. S.
Straight
Shank
Drill



No.
426



H. S.
Oil
Tube
Drill



No.
436



H. S.
Black-
smiths'
Drill



No.
444



H. S.
Bonding
Drill

HIGH SPEED



No. 84 HIGH SPEED SET

Here are presented in compact and convenient form all the sizes of straight shank high speed drills, steel wire gauge, from No. 1 to 60 inclusive. These number sizes are plainly marked on the drill and on the stand in a position opposite the proper hole. Even numbers are on one side and odd numbers on the other, thus assisting in ready selection.

NEW YORK OFFICE
30 READE ST.

THE CLEVELAND

ARE especially
tool re-
chanics' be-

HIGH SPEED
ing the place
of the modern
these drills in
on the stands
convenience
stands are on
adapted for
and they are
is in oxidized
handsome and

Pric

DRILLS IN SETS

Especially useful in
holes and on me-
chanical.

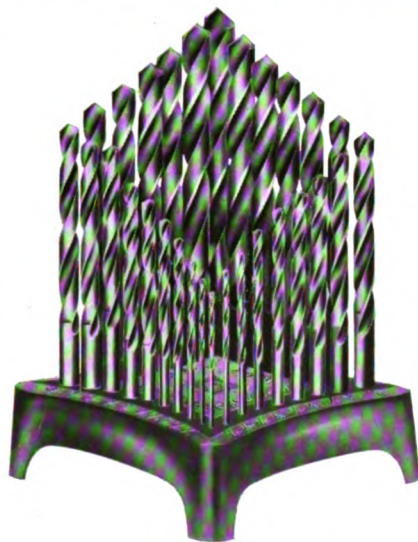
SO DRILLS are tak-
ing carbon drills in most
modern efficient plants and
various sizes, arranged
as shown, offer a great
benefit to the workman. The
composition metal,
for particular purpose
is rustproof. The finish
is copper, which is both
durable.

on Request



Mark

TWIST DRILL CO.
CHICAGO



No. 54 HIGH SPEED SET

This set comprises all the sizes of
jobbers' straight shank high speed
drills, from $\frac{1}{16}$ inch to $\frac{1}{2}$ inch inclu-
sive, by 64ths.

Each drill fits into a hole plainly marked
with its size. As all the 32nd sizes are on one
side and the 64th sizes on the opposite side,
selection is made easy.

CHICAGO OFFICE
9 NO. JEFFERSON ST.



No.
426



H. S.
Oil
Tube
Drill



No.
436



H. S.
Black-
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Drill



No.
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SPEAKING OF AMERICAN BEAUTIES

T seems that there's always someone ready on the instant to slip sand into the spearmint. Just this morning, for instance, we were gloating over a batch of letters bearing the glad tidings that we had made a ten-strike in our last issue, when in bounces the boss and spills gloom all over our dressing table.

He had it all done up in an envelope, bound round with a scarlet string. It looked like a congressional record, so we fortified ourselves for the draught by a long pull at the cooler. Then we gave ear to the bad tidings. In spite of our earnest pleadings, Congress has up and done it. With heart-breaking disregard for our tender feelings, they have dumped into the legislative hopper a batch of hops, which may prove intoxicatingly delicious to the folks back home, but to our uncultivated cerebellum, they are about as appealing as a trip to a windswept allotment on a December day.

Our colleague in misery, Harper's Weekly, points out that Congress, prior to its first adjournment, presented itself with 6848 bills. Of these, only 758 were of a public or national nature. The balance were concealed chunks of pork done up in handsome packages. 4144 were for pensions, 1037 for private claims, 453 for local improvements—etc. But of the 758, introduced presumably for the betterment of the Nation, there were two or three peculiarly choice selections that we would like to have you try over on your piano:



Legislative nightmare number one, dignified by the cognomen H. R. 8677, provides that no efficiency system shall be used in connection with Government work, and we are informed that demand is to be made for a bill prohibiting efficiency systems on any work intended for the Government consumption. Ye Gods, has it come to this thusness? The days of wolves



disguised in sheep's clothing are not past, for do not our grandmothers today look like their nieces and does not H. R. 8677 conceal behind its flowery mass of verbiage the legalizing of governmental inefficiency? Forsooth let us crown the loafer, make work a deuced vulgar thing and admit the Soiled Order of the Sons of Rest into partnership with the Stars and Stripes. Gentlemen, the lid is off and Utopia is the next stop.

H. R. 8677 merits a heavy guard, for apparently there is a dark-hued party in the Congressional woodpile.

But, it is growing late and we must be on our way.

But wait a moment, here is lemon number two, disguised in the costume of S. B. 1790. S. B. 1790 is a real American beauty, with that light that is proverbially found in a woman's eyes. She demands that his reverence, yon Secretary of Labor, organize the unemployed into an army at \$2.00 per diem per head—the inexpensive detail of board and lodging being provided without charge; then, having depopulated the entire country by this means, this aforesaid and previously mentioned army is to be employed on Government works. That their health may not be rendered precarious, eight hours a day is to be the maximum period of labor.

But did we read aright? 'Tis so. S. B. 1790 furthermore provides that if the Government runs out of roads and stone piles, it is to dash out into the open and collect a few mines, a chorus of nice sizeable manufacturing plants or anything that is running around loose. Then it is to put this Elysian army to work in finishing munitions or hair-pins or do-dabs or thingamajigs. Great, simply immense! A regular job will soon become a grievous liability and a loathsome burden. Free beer will be the next great national issue. But the end is not yet.



No.
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No.
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H. S.
Black-
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Look ye—yet another approaches on horse-back waving the Star Spangled Banner and bearing a screaming eagle rampant on a field of bunk. His motto is, "Made in America, U. S. A." which must be imprinted from July 4th, 1916, in six point type upon all goods subject to interstate commerce. Stupendous! A mighty intellect to conceive this scintillating brain-child. From henceforth our tooth-picks, pins, needles and our No. 80 drills will fly the symbol of the Land of the Free and, of course, will be enormously enhanced in value because of this symbol.

How six point type can ever be persuaded to stick to a No. 80 drill is, of course, a mere incident. It is a negligible detail, like trying to get into your baby's union-suit. Pish, pish, walk softly for someone is dreaming sweetly of the front page in the Sorghum County Sigh.

We will close the services this evening with the first, eighth and fifty-ninth verses of hymn No. 426 in the little red book entitled, "Oh, the Beautiful Land of Somewhere, Where our Congressmen Ever do Roam."

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PEN POINTERS

Editor's Note—Once in a blue moon, something unusually good bobs up amongst the flotsam and jetsam of business hints and helps. Here's a particularly pithy article on Business Correspondence by Mr. L. Howard-Smith of The Seattle Hardware Company. It's right and to the point—and true as gospel.

VERY correspondent should have clearly outlined in his mind before beginning a letter: first, all the available facts bearing on the subject, and second, as much as possible about the personality of the house to which he is writing.

The ordinary letter should be written with two things always in view,—to say clearly, completely and briefly what you want to say, and to so say it that you will leave a favorable impression in the mind of the man to whom you write.

The four most dangerous errors I would class as follows: Familiarity, jokes, unnecessarily committing your house to a price, a policy or an adjustment, and fourth, an unpleasant impression when your letter is read. Rarely is it necessary to write so that the man at the other end will be turned down point blank or criticised; the occasion for such letters are infrequent, and they should always be written by one who is recognized as holding a position of authority and responsibility.

The danger in familiarity lies in your complete uncertainty as to the mood in which your letter will find the other man. There is nothing quite so risky in a business letter as a joke, for the reason, again, that you can never guess just what the conditions will be, when your letter is read.

If you are making a quotation to say, "We will furnish you such and such an item at such and such a price," is mortgaging the future. Word your quotation so that the customer will be told clearly what your price is, but not so that he can hold it a month and then come back after the market has risen and claim your original figure. You are safe if you put in the clause: "This quotation is for prompt acceptance" or "Subject to market changes" or "Change without notice."

Bearing in mind the value of brevity in a business letter, one should not overlook the opportunity, when writing to a customer, of bringing to his attention some seasonable line, or lines. If you have a number of points which it is important to bring to your correspondent's attention, you can accomplish this much more forcibly by devoting a short paragraph to each.

Don't get into a groove in your letter writing by always beginning and ending with the same phraseology. A man who gets frequent letters from you may get a little weary of having all your communications start: "Yours of the steenth to hand and contents noted." Bear in mind that a letter is nothing more or less than a conversation. Instead of "Your favor of the tenth to hand and contents noted," you might say, "Your letter of the tenth reached us this morning and we are glad to hear that our shipment came through so promptly," etc., etc. Do not refer to "the same" or to his letter as "Your favor"; such wording is now condemned by the best business letter writers. Make your language simple, your wording clear and your sentences short; and above all, put yourself in your customer's place, and for heaven's sake give him the information he wants.



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REGARDING CONDITIONS

THE present abnormal state of the machine tool and small tool industry is evident to all. The hardships incident to this condition are embarrassing to all—although possibly you as a “Cleveland” customer feel the effects particularly keenly when you compare present deliveries with our prompt service of the past.

As you know, we have hitherto carried a good stock of finished product both in carbon and high speed tools. Under normal conditions our manufacturing facilities are ample to keep this stock complete, but, during the last eight or nine months, the demands of our customers have increased so rapidly that not only has our stock been exhausted, but today we find ourselves very much behind on orders.

“But why,” you rightly ask, “why do we not increase production to meet the increased demand?” Our answer may amaze you. It is this—

Today our output is greater than it has ever been in our history. It is greater than we ever dreamed possible. Yet as swiftly as we have increased our facilities, *twice* as swiftly has the *demand* for “Cleveland” tools increased. For every jump upward that our production has taken, orders have taken two jumps—and this in spite of early preparation for the deluge which we saw impending. The largest umbrella in the world would be useless in a Johnstown flood of orders such as we are now receiving.

Under such conditions to play fair with all is a problem, for what constitutes “fair play?” Here’s our answer: For months we have consistently refused to fill orders from any but our old, established customers. Knowing that there are not enough “Cleveland” tools to go around, we have focused our entire efforts on those concerns who have favored us in past years. That action is only just. Yet, even with this safeguard, the influx of increasingly large orders from old friends has completely engulfed us and it becomes more and more difficult to render a delivery service that is satisfactory to either one of us. We know full well that we are not giving all the delivery speed that you would wish. No one regrets it more than do we, but we want you to understand how earnestly we are striving to fill the gap that now separates our increasing production from your increasing requirements.

Bear in mind that in this striving for increased production there is a limit beyond which we cannot safely speed our facilities—for, much as production

must be increased, it must never be so hurried as to endanger the stamina of "Cleveland" tools. Good tools are worth more to you today than ever before—they are worth far more than are the few "extra" hours to be gained in shipment, through the use of over hasty manufacturing methods. Such "extra" hours would be doubly lost to you in the diminished and unsatisfactory productiveness of tools so made. We realize this thoroughly and therefore have tempered our desire to serve you speedily with the determination that, at this crisis, "Cleveland" tools must continue to deliver a good account of themselves. Increased production and *safe* production must go hand in hand.

You know already that no "war babies" are gumming up our productive facilities, and you know that no strangers to "Cleveland" tools are now enjoying their use. But be it known that there is no "robbing of Peter to pay Paul." All orders on completion are shipped in order of receipt—first come, first served. The editor pleads guilty to trying to break this rule—he needed some of those souvenir watch charm drills in the worst kind of way and he tried to "put one over." He was told in no gentle language that he might take a run out and jump into Lake Erie's cooling waters to quench his burning fever. Indeed he was most rudely treated and his order was turned down *flat*. No more watch charm drills till a distant future date.

So you see that everyone from the Boss down to the office boy is fully alive to your needs and is acting accordingly. We realize that you must have tools to keep your shop running full blast, and in justice to all we are trying to so distribute our product that no one shall receive *more* than he needs and none shall be left naked.

It is a hard thing to sit thus in the seat of Justice, and the court can exhibit one or two bumps, presented by dissenting friends, to prove this contention. But through it all we have a lively appreciation of our debt to you and are living up to its demands to the best of our humble ability. Angels can do no more.

Incidentally you are familiar with the enormous pressure on the steel industry, and you, too, are undoubtedly experiencing difficulty in obtaining the steel you want, when you want it. Six to eight months ago we endeavored to anticipate our requirements, but, even so, the difficulty is not entirely obviated. As we are all more or less dependent on the steel supply, we can well appreciate each others troubles in this regard—and after all, your problems and our problems are so similar that a mutual understanding of these problems will bring about a mutual consideration which will shed the light of confidence over all our relationships.



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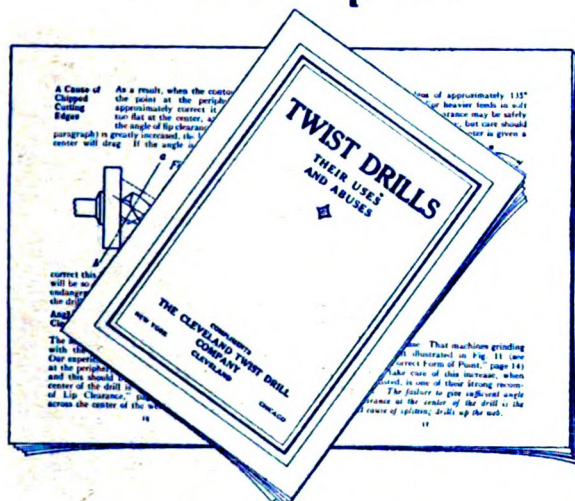


H. S.
"Paragon"
Forged
Drills
Hold
World's
Drilling
Record



**Dressing Up
Our Boy to be
A Soldier**

It Will Help You



YOU'LL like this little volume of drilling hints and helps. Its 32 pages of brass tack talks are equally valuable and interesting for the skilled mechanic or the apprentice. Just read these chapter headings—

The Twist Drill—Theory and Design
Experiments with Drills of Various Shapes
Drill Speeds and Feeds

Point Grinding
Miscellaneous Helps
Importance of Conditions

Table of Cutting Speeds

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 BY RETURN MAIL. ASK FOR "BOOKLET NUMBER 14"

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 NEW YORK CLEVELAND CHICAGO



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PUBLIC LIBRARY

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ASTOR LENOX
TILDEN FOUNDATIONS

DRILL CHIPS



FOR JUNE

Cleveland
VFA

"I CANNOT recommend to your notice measures for the fulfillment of our duties to the rest of the world, without again pressing upon you the necessity of placing ourselves in a condition of complete defense***There is a rank due to the United States among nations, which will be withheld, if not absolutely lost, by the reputation of weakness. If we desire to avoid insult, we must be able to repel it; if we desire to secure peace, one of the most powerful instruments of our rising prosperity, it must be known that we are at all times ready for war."

From Speech of President Washington to Congress December 3, 1791



C. H. Handerson, Editor

NO, this gentleman wasn't quite the type you'd slap on the back and call Arty or ask to step up and have another of the same. No, sir, nothing like that—this chap wore a frock coat he did, and looked like a wood-cut of grandfather that time he was runnin' for the state legislature.

He was the speaker of the day and took himself very seriously. He had to—he was a discoverer. I couldn't doubt it for I had his word for it, and besides the newspapers said he was Some Pumpkins. He had discovered the "Beauties of the Committee Form of Management" and was philanthropically dispensing the same without charge to all comers.

"Committees," he quoth, "are the true development of a democratic age. They distribute authority and responsibility, and are the touch-stone of managerial success." Committees, by just sitting, can do almost any old thing, seemingly. They can rehabilitate the days of miracles and free lunch, they can run a business that has never



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H. S.
Taper
Shank
Drill



No.
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H. S.
Three
Fluted
Drill



No.
417



H. S.
Straight
Shank
Drill



No.
426



H. S.
Oil
Tube
Drill



No.
436



H. S.
Black-smiths'
Drill



No.
444



H. S.
Bonding
Drill



No.
930



H. S.
'Paragon'
Forged
Drills
Hold
World's
Drilling
Record

been known to do anything but walk, they can revive esprit de corps and e pluribus unum and most anything like that. Apparently the committee form of management is a discovery second only to the news that the earth is round and that it pays to advertise.

It certainly was beautiful as he painted it—a regular gold and tinsel heaven on earth. But as a free born and freely taxed American citizen I did not have to agree with him, and, to be very frank about it, I didn't.

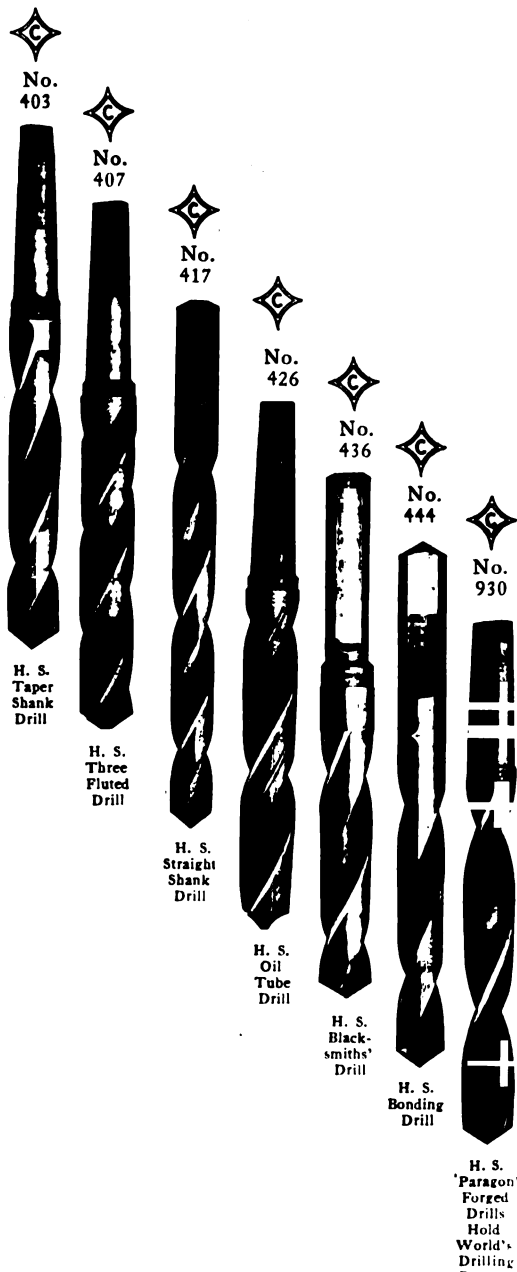
Now we just hate to disagree with anyone, in fact wherever possible you will note that we have steadfastly avoided sanguinary strife, but we must say that to our mind a committee is all right except that it generally degenerates into a dainty floral tribute hung about the necks of three to five men. When the spirit moves, these good men and true meet about a nicely polished mahogany table and talk real serious-like, with lots of clearing of the throat and sober stuff. After prolonged debate they decide nine hundred and ninety-nine things correctly—and the Firm pats them on the back and tells them that they are the Real Thing and are gifted with truly supernatural insight into business matters. Of course every blessed one of that same committee could have made the same decisions in less than half the time required by the committee, but that's entirely

confidential and not for vulgar knowledge. Anyhow the things they decided didn't amount to a whoop in Hades. So their decision stands as final—on the 999 varieties of inconsequential questions.



But then rumbling down the road comes a real question with fire in its eyes and a bristling, horny hide. The committee forthwith wrestle with that question and sit on it and chew and hash it around. Meanwhile the firm has an ear to the key-hole, and grins wickedly to itself, but says nothing. Pretty soon the committee licks that question to its own satisfaction and it is all decided and settled—except the little detail of telling the firm. So they duly engross their decision on imitation parchment and pass it along to the Man Higher Up, who apparently has been waiting for it with bated breath.

He reads the conclusions of this committee and announces that they are full of prunes and unspeakably crazy and withal decidedly rotten. He throws them out on the heaped-up pile of other momentous decisions that he didn't like and substitutes therefor one he had ready about three minutes after the committee went into session. Naturally the committee is much miffed, but the Firm calls them in and asks them to



decide whether or no it would be advisable to use red or blue-headed matches during the forthcoming year. They go into solemn session and weigh the pros and cons, and the Boss gravely accepts their report—and all is again quiet along the Potomac.

Committees are fine until something worthwhile is up for decision—then it's a wise committee that first plumbs the Boss and decides accordingly. We hate to get personal but the truth must out—we have served our time on committees of sundry sorts and sizes and more often than not they have been about as illy balanced as the side view of a German barkeep. Generally one chap was a superior officer of some sort. The remainder were supernumeraries of lesser glory. Now do you honestly think that any of us pikers would be so foolhardy as to even intimate publicly that we doubted the complete and everlasting correctness of our superior? Not if we knew it and so this brand of committee was and still is doomed to agree (with the superior officer) as a matter of expediency and daily bread.

But grant that the gentlemen composing our committee can be drawn from equal positions of rank, importance and influence, what have we then—a debating society. John Hill once said—he may have said it twice, but it only



reached our ears once—"Battles have been won by poor generals but never by debating societies." Such committees approximate a vocal Marathon, run around a circular track, and travel about as far as a phonograph needle in its race across the record.

But as our speaker of the day pointed out, committees are democratic and ideal. Democracy is a great thing—its fundamental precept is that all men are born free and equal. The only trouble is that they get over this natal equality—they always have and always will. Someone is always going to be Boss—even in an ideal Socialistic state someone will have to distribute the bacon. The creation of committees won't change this prehistoric course of human nature any more than a convention of tailors will stop the bagging propensities of a trouser leg.

By using the hypodermic we might imagine an employer gracefully stepping down and out and requesting the department heads to run things *ad interim*. Each of these department heads will consider himself well able to run the business without any assistance (of course any one of us could do it, if we had half a chance)—but with all the others around, we'll be forced to listen while they air their views on how it ought to be done, and the ensuing discussion is not likely to be exceptionally parliamentary. The late lamented Oscar II had



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H. S.
Three
Fluted
Drill

No.
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H. S.
Straight
Shank
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No.
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H. S.
Oil
Tube
Drill

No.
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H. S.
Black-
smiths'
Drill

No.
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H. S.
Bonding
Drill

No.
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H. S.
'Paragon'
Forged
Drills
Hold
World's
Drilling
Record

on board some sixty persons each eminently capable of running everything and each morally convinced that peace hung on his individual action alone. The result was that Madam Schwimmer fought individually and collectively with the other fifty-nine heads, as did each of the others likewise, until the dove of peace was thoroughly shredded and canned. All of which forecasts the fate of a committee composed of men each individually capable of unaided decision.

We've forgotten just how many men England placed at the helm, when the war started—there were quite some several. Gradually the pace got too hot and some of them slid off into oblivion until only five remained to boss things. Five were about four too many, so they compromised and two took to the timber. Three managed fairly well, but it looks as though it might end in a solo part by one dominating character—a case of a committee committing suicide by request. Down in Washington, D. C., we have a committee of men known as Congress. They have other committees to weed out the less important issues that they may chew on the Big Stuff only. In the course of human events they sometimes reach decisions, but when action is wanted

and wanted post haste—the committees take the switch and the President runs the flier decision through on time. For leisurely shooting, committees furnish ideal sport for the linguistically inclined, but when you've got to shoot from the



hip, then don't reach for a committee—they have time fuses only.

From this you perhaps have gathered that we cannot bring ourselves to swallow committee management as the cure-all for managerial or industrial evils. We believe that the Boss has a constitutional right to run his business as he sees fit—it's his baby and his money took the initial risk. His batting average on decisions is usually pretty respectable, because he doesn't become Boss until he's been through the mill from soup to nuts; and because he alone can constitute a committee, he also has the right to scatter it to the four winds, if at any time it may become a trifle overbearing or sassy.

Yes, committees are beautiful, but, like many beautiful things, in actual practice they have no more real reason for existence than have the five pounds of pins that hold together a brand new shirt and do naught but lend complexity to an otherwise simple matter.

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HIGH SPEED OR CARBON DRILLS?

WE are embarrassed—intensely so—we have ever studiously refrained from mentioning business in these pages, preferring to settle great national issues and questions of state. Undoubtedly in so doing we have been of inestimable assistance to Mr. Lansing and other headliners in the national vaudeville—in fact we feel certain that only an unfortunate clerical error has prevented them from



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“Don't Scrap This Drill”

Just because its tang is twisted off
is no reason for scrapping it —

Over in the tool room you'll find a

PERFECT DOUBLE SOCKET

Get it. Grind a new tang on the drill—just below the old one—and slip it into the “Perfect Double Tang” socket. You'll have this drill back on the job in three minutes, and it will be 25 to 60 percent stronger than before—and we'll save the cost of a new drill.

The “Perfect Double Tang” socket gets full drilling life from every drill regardless of the life of the original tang, and it eliminates the waste incident to broken and twisted tangs.

It's in one piece—simple, inexpensive and fool-proof—a necessary adjunct to every economical shop.

You'll be interested in “Perfect Double Tang Catalog 388.”

THE
CLEVELAND ♦ TWIST DRILL
NEW YORK CLEVELAND



Drill with broken tang ready for grinding on new tang



Drill with new-ground tang ready for the "Perfect Double Tang" Socket



Drill with new-ground tang and "Perfect Double Tang" socket ready for work



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No.
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H. S.
Oil
Tube
Drill



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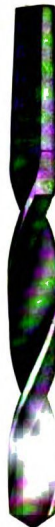
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sending us an engraved loving cup as a token of their appreciation.

But times and customs change and today we are forced to change our mental diet—national issues are issuing so swiftly that it's only with difficulty we keep our feet in the storm. As a haven of refuge we turned to Business—your business—only to find it also much perturbed. Hence our embarrassment, for we have become like unto Noah's famous dove which you may remember could find no place to light with safety.

Careful search discloses that the cost of high speed steel is hobnobbing with the Angelic Hosts on high. Considering this fact it is only logical to inquire whether it wouldn't be economy to turn from high speed steel drills to carbon steel drills—a high speed drill costs about ten times its carbon duplicate and yet on a very conservative estimate it can only turn out about five times the work per day. On the surface it looks as though the high speed drill cost more than the worth of its additional production.

This problem is one of utmost moment to us all—be we drill users or drill manufacturers. Drill users must know the correct answer that every precious hour of the working day may be turned to maximum profit, and the drill manufacturer must foretell the correct answer that he may prepare himself for the demand and be of utmost service to his customers. Hence we have no apologies to make in admitting that this question has been up on our rag carpet for careful discussion and consideration. Without going into the detailed arguments pro and con we think perhaps you will be interested in one or two charts and a couple of basic facts that lead us to a very definite conclusion—

Obviously, in this trial, the high speed drill is the defendant—he is charged with costing ten times the price of the same drill in carbon steel and with doing only—let's be *ultra* conservative here and say—*four* times the work per day. Apparently the defendant is guilty of extortion and a hideous array of heinous crimes. You and I suspect, however, that the charge is based on

purely circumstantial evidence. Perhaps there are other facts which should be placed before the jury?

Let's take a concrete case with purely arbitrary figures for illustrative purposes—suppose you have before you two shops, each of which turns out 10,000 identical pieces per day.

Shop "C" uses carbon drills exclusively; shop "H" uses high speed drills only.

For the sake of argument say that those carbon drills used by shop "C" cost \$1.00 each and we'll agree then that the high speed drills used by Shop "H" cost about \$10.00 each—or ten times as much. And we are going to give these high speed drills a decided handicap by pretending that they will do only *four* times the work of the carbon drills per day. On this basis, if Shop "C" requires 20 carbon drills to turn out their 10,000 pieces per day, Shop "H" will require 5 high speed drills to turn the trick. The question now is, "Which shop is operating with the greatest over-all economy?" The answer will do much to determine the relative economy of carbon versus high speed drills. To make the facts clear we'll put them in chart form—



EXPENSES OF SHOP "C" AND "H"

SHOP "C"		SHOP "H"	
20 carbon drills at \$1.00	\$ 20.00	5 high speed drills at \$10.00	\$50.00
20 men to care for them at \$2.50 per day	50.00	5 men at \$2.50 per diem	12.50
*100% machine expense	50.00	*100% machine expense	12.50
Total cost of carbon user ..	\$120.00	Total expense of high speed user ..	\$75.00

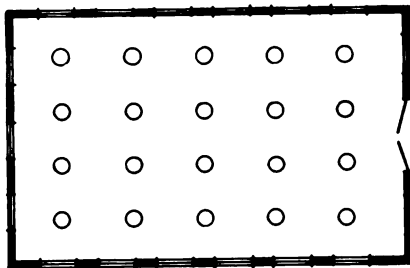
*Machine expense includes taxes, insurance, depreciation, repairs, power, a share of the rental charge in proportion to the space occupied, as well as necessary superintendence. For the sake of comparison, we have assumed this to be only about 100% of the productive labor, though in many shops it is considerably more than this.

These figures show a net saving to the high speed user of \$45.00 per day—and if we figured machine expense at 150%, which would be conservative for many shops, this saving would be even higher.



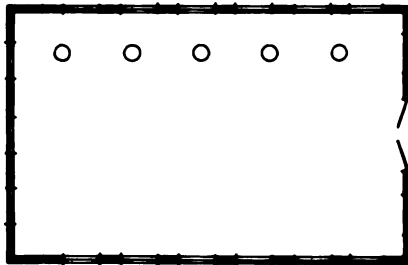
A rough sketch of their shops showing the number of presses necessary to handle these two duplicate jobs may prove illuminating—

SHOP "C"



Shop "C" using 20 presses produces no more than its neighbor on the right.

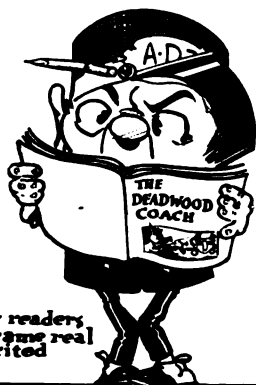
SHOP "H"



Shop "H" needs only 5 presses for that job while the balance of the space is doubtless being used for another job which would add another profit to the balance in favor of the High Speed Shop.

In these figures and charts every possible advantage has been given to the carbon drill—we've been right from Missouri and have forced the high speed user to convince us against all possible odds—for the sake of argument we've figured that the high speed drill will do only four times the day's work of the carbon drill, when as a matter of fact under ordinarily favorable conditions a high speed drill should do five or six times the work of a carbon drill per day. We have neglected entirely to consider that at a minimum estimate the high speed drill will drill four times as many holes per grind as will the carbon drill—or in other words, even if we neglect the matter of speed we find that the high speed drill, during its life, will do four times the work of its carbon counterpart.

Of course there are certain conditions where high speed drills cannot be used economically. We endeavored to point these out in a recent issue, but some of our readers became real excited right at the start and failed to read this article through. To prevent confusion we'll repeat—"There are certain conditions where we would not recommend the use of high speed drills for economical drilling—when a speed of at least 50 feet a minute is not obtainable or when you are using drills *under $\frac{5}{32}$ " etc."*



-our readers
became real
excited

—but *when you are using drills of $\frac{3}{8}$ " or over if your equipment is favorable we sincerely recommend the high speed drill.*

In a hasty survey of the situation, it is but natural that you should compare the additional cost of a high speed drill with the additional daily production to be expected from it. On this basis your conclusions are apparently much in favor of the carbon drill—but such reasoning is faulty, because the first cost of a h. s. drill is only an incident, which should soon be buried in the immensity of its production—if you

bought an automobile you'd consider it poor economy to equip it with an inefficient carburetor, because the comparatively high cost of an efficient carburetor would soon be regained a hundred fold in the increased mileage obtained. Just so with the drill—you invest three or four hundred dollars in a press and to equip it with any accessory that is not capable of top-notch efficiency seriously handicaps the press and unnecessarily limits your return on the entire investment.

While much might be said on this subject, the pith of every argument is that the value of a drill bears only a very remote relation to its first cost—in these days of pressure, especially, it's the time and the wages saved, the increased product turned out, and the extra space and machines gained for utilization in other ways that determine the value of a drill or of any productive piece of machinery. It's the machine expense that really eats into the profit and anything that will hold down machine expense is worth using although its price may apparently be excessive.

When you pack your grip, and, with tears in your voice, tell your wife that you are



No.
444



H. S.
Bonding
Drill



No.
930



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Drills
Hold
World's
Drilling
Record

called to the metropolis on business, you are very likely to have in your pocket a ticket for the express train. Of course that is an "extra fare train." It costs two or three dollars more than the "accommodation," but it saves three or four hours of your productive time. You know you will make more money in those three or four hours than the cost of that extra fare and so you take the express and leave the cheaper accommodation train for less wise competitors.

The high speed drill is the express train of drilldom. The carbon drill is the local, the accommodation. Which train do you take?

▼ ▼ ▼

ON TAKING IT SERIOUSLY

FAITH and it's a crying shame—the sport of kings is becoming vulgarized and common. Time was when a presidential possibility was a rare bird and we'd walk miles just to see him eat. But nowadays it's all changed—now everybody's either running for president or running away from it, and although we used to admit none but the 90 H. P. stuff to the race track, this year, for the first time in history, we've admitted a light runabout. How the mighty have fallen! Unless we're blame careful, running for president will put baseball on the blink as the premier national pastime. And everyone who runs considers himself divinely called to cure us of a national ailment and no two agree as to the correct diagnosis or the remedy—one would give us peace at cut prices while another is for the brass knuckle and cauliflower ear treatment. Of course we want to be nice to these gentlemen, so we listen real respectful and, to please them, we try to look fittingly indisposed—now, there's no danger in playing sick, the danger lies in playing the wrong kind of sickness and doing it so durned well that we believe it ourselves.

▼ ▼ ▼

Play golf? How'd you like a first class, well bound score book to stick in your vest pocket on Saturday afternoons or on ye Sabbath mornings, when you ought to be in church? Our president, Mr. J. D. Cox, has prepared a handy non-lying record which is warranted to show at a glance the comparative standing of any number of players up to six. It won't improve your game, but it will save wear and tear on your forgettery and may save you an argument. We have soft pedaled all advertising on it so as to make it look as though it cost you a million dollars, but we'll gladly send it to you without charge for a pleasant season on the links, and the asking. How many, please?



C·T·D·IMMORTALS

AT last—one of the fairest flowers of drilldom is about to shed his unmentionables to don the airy garb of immortality. Cast your eyes upon his stalwart bulk; note that well-upholstered chassis and how unabashed he is at the approaching disclosures. What a delicious dimpled cherub he will make for our collection! Glimpse, too, that sweeping forehead—with which he sweeps from the country of corn juice and colonels to the land of the maple leaf. Maryland, Ohio and the Hoosier State, West Virginy, Canady and the State of Matrimony are all his—especially the latter, which is fortunate, otherwise we, here t'home, would never see him a tall. But now he shows up every Saturday night regular like the

bath tub. It's the only thing that makes him come back—which reminds us that he is *there* with the come back stuff, in fact he's the guy that plays the leading part in repartee and although he deals in holes no one as yet has been able to back him into one. About 1907 he acquired a taste for our company and we at once called him "Gloomy"—but only that once. Then we learned to know him better and he earned the plutocratic title of "Lord," which sounds horribly dignified. But under those iron-bound periscopes is a twinkle and underneath that dignified scenery is a heart as big as his territory.

Gentlemen it gives me great pleasure to introduce to you The King of the Saturday Night Five Hundred Club—the Honorable Robert G. Berrington, Ambassador Extraordinary and Minister Penitentiary.



No.
930



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DRILL CHIPS TABLE of CUTTING SPEEDS



Feed per Rev. Min.	30'	40'	50'	60'	70'	80'	90'	100'	110'	120'	130'	140'	150'
DRILL SIZE	Revolutions per Minute												
1/16	1833	2445	3056	3667	4278	4889	5500	6111
1/8	917	1222	1528	1833	2139	2445	2750	3056	3361	3667	3973	4278	4584
1/4	611	815	1019	1222	1426	1630	1833	2037	2241	2445	2648	2852	3056
3/8	458	611	764	917	1070	1222	1375	1528	1681	1833	1986	2139	2292
1/2	367	489	611	733	856	978	1100	1222	1345	1467	1590	1711	1833
5/8	306	407	509	611	713	815	917	1019	1120	1222	1324	1426	1528
3/4	262	349	437	524	611	698	786	873	960	1048	1135	1222	1310
1	229	306	382	458	535	611	688	764	840	917	993	1070	1146
1 1/8	183	244	306	367	428	489	550	611	672	733	794	856	917
1 1/4	153	203	255	306	357	407	458	509	560	611	662	713	764
1 1/2	131	175	218	262	306	349	393	436	480	524	568	611	655
1 3/4	115	153	191	229	267	306	344	382	420	458	497	535	573
2	102	136	170	204	238	272	306	340	373	407	441	475	509
2 1/8	92	122	153	183	214	244	275	306	336	367	397	428	458
2 1/4	83	111	139	167	194	222	250	278	306	333	361	389	417
2 1/2	76	102	127	153	178	204	229	255	280	306	331	357	382
2 3/4	70	94	117	141	165	188	212	235	259	282	306	329	353
3	65	87	109	131	153	175	196	218	240	262	284	306	327
3 1/8	61	81	102	122	143	163	183	204	224	244	265	285	306
3 1/4	57	76	95	115	134	153	172	191	210	229	248	267	287
3 1/2	51	68	85	102	119	136	153	170	187	204	221	238	255
3 3/4	46	61	76	92	107	122	137	153	168	183	199	214	229
4	42	56	69	83	97	111	125	139	153	167	181	194	208
5	38	51	64	76	89	102	115	127	140	153	166	178	191

THIS table should be used only as a guide and the correct speeds should be determined by good judgment applied to each individual case.

It is safe to start carbon drills with a peripheral speed of 30 feet per minute for soft tool and machinery steel, 35 feet for cast iron and 60 feet for brass, using in all cases a feed of from .004 to .007 inch per revolution for drills 1/8 inch and smaller, and from .005 to .015 inch per revolution for drills larger than 1/8 inch in diameter. At these speeds a suitable cutting compound should be used for wrought iron and steel.

In the case of High Speed Drills the above feeds should remain unchanged, but the speeds should be increased from 2 to 2 1/2 times.

All of the speeds recommended are only the speed at which the drills should be started. They are approximate for average conditions only. They can be greatly exceeded under some conditions but under others they will have to be reduced. In all cases the operator should be guided by observing the condition of the drill in connection with the suggestions on pages 18 to 21 of "Twist Drills—Their Uses and Abuses," which we will gladly send on request.

PASS THIS TABLE ALONG TO THE
MAN IN THE SHOP—HE WILL
FIND PLENTY OF USE FOR IT

Additional copies of this chart if you wish them.

"THE only way you can ever expect to do big successful work is to step *away* from it frequently and see what you are doing."

Augustus St. Gaudens.

AND so, if we have helped you, through this little volume, to get a little way off from the daily grind, perhaps after all it was worth the candle.

National Defense and International Peace



What the Engineers are Doing

THIRTY thousand American engineers are making a card index survey of American industry so that it may be prepared for its vital part in defending the Country, if need comes. The past eighteen months have taught us here in America what lack of industrial preparedness has meant to some of the countries now at war. These nations had the ships and they had the men; but when the hour struck, their factories were not able to furnish the colors with arms and shells and powder. Their factories were not prepared. And our factories are not prepared.

But it is not enough to draw a moral. In the United States five great Engineering Societies — Civil, Mining, Mechanical, Electrical and Chemical — have pledged their services to the Government of the United States, and are already working hand in hand with the Government to prepare industry for the national defense. They receive no pay and will accept no pay. All they seek is opportunity to serve their country, that she may have her industries mobilized for defense.

All elements of the nation's life — the manufacturers, the business men, and the workingmen — should support this patriotic and democratic work of the engineers, and assist them cheerfully when asked. *There can be no better national insurance against war.*

The Associated Advertising Clubs of the World, representing all advertising interests have offered their free and hearty service to the President of the United States, in close co-operation with these five Engineering Societies, to the end that the Country may know what the Engineers are doing. The President has accepted the offer. The Engineers have welcomed the co-operation.

This advertisement, published without cost to the United States, is the first in a nation-wide series to call the country to the duty of co-operating promptly and fully with the Engineers.

NAVAL CONSULTING BOARD OF THE UNITED STATES

IN CO-OPERATION WITH

THE AMERICAN SOCIETY OF CIVIL ENGINEERS
THE AMERICAN INSTITUTE OF MINING ENGINEERS

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THE AMERICAN CHEMICAL SOCIETY

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DRILL CHIPS

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July
'16

BIRTH of a
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RESPONSIBILITIES
GRAVITATE TO
THE PERSON WHO
CAN SHOULDER
THEM, *AND* POWER
FLOWS TO THE MAN
WHO KNOWS HOW.

— *ELBERT HUBBARD*

• • •

PRESENT EVENTS PROVE IT—
:: READ ON, MACDUFF ::



C. H. Handerson, Editor

*"Patriotism, unless expressed in service,
is a thing of little value."*

CHILDREN dear, see that beautiful verse I swiped to write on the blackboard for you? Isn't it thrilling — we must make it the subject of this morning's lesson on "The New American Patriotism" or "When Rip Van Winkle Awakens" — a stirring but mellow drama in several spasms. Quiet, dears, while I raise the curtain —

▼ ▼ ▼

He was the speaker of the day and they had paid his expenses all the way from Washington, D. C., and closed the saloons to celebrate his coming. He seemed to feel under obligation to them and so he spoke about two hours and several other little things. Evidently he had not had time to prepare a briefer address.

It was the Fourth of July and everything was draped in flags and perspiration in honor of the occasion. In return for



No.
403



H. S.
Taper
Shank
Drill



No.
407



H. S.
Three
Fluted
Drill



No.
417



H. S.
Straight
Shank
Drill



No.
426



H. S.
Oil
Tube
Drill



No.
436



H. S.
Black-
smith's
Drill



No.
444



H. S.
Bonding
Drill



No.
930



H. S.
'Paragon'
Forged
Drills
Hold
World's
Drilling
Record

some 120 minutes of physical torture we learned that we were the greatest nation on earth — bar none. The Senator said so — ergo 't was a fact and not to be disputed by the rabble.

Precedent, that taskmaster of our race, decrees that Fourth of July celebrations propitiate this doctrine of our greatness regardless of its degree of truth. But the Senator did very well, considering the nature of his theme, and we departed with our bosoms filled with The Spirit of America — which was the subject of his oration.

'Twas a grand feeling too, while it lasted. We were all wrapped up in the Stars and Stripes with laurel wreaths on our heads and kingdoms suppliant at our feet. No doubt we would have believed it to this day, if we had not purchased a newspaper on the way home.

Now newspapers find it expedient to reflect the Nation's tendencies in minutest detail; they give the people what they want and in so doing they tell them what they are; they hold the mirror up to us and display our manifold blemishes and beauties in unlying profusion.

Idle curiosity made us compare what the Senator had said about us with what the newspapers seemed to show about us — the Senator had called us a united people and had proclaimed that God was in His heaven and all was O. K.

with the U. S. A. Here's what the paper said —

A headline told of gore, graft and corruption, while nearby some ism, of momentary popularity, spouted forth fountains of vindictives against everything impartially. Socialism, suffragism, pacificism, prohibition, and a hundred other isms there were — all claiming that we are bound cross-lots for the eternal bowwows, though a single dose from their bottle (Prohibition offering pills instead) would cure us *instantner*.

In the next column we read the ravings of some misguided patriot, busy bouncing abuse upon the White House roof, while a lusty crew of me-too citizens vociferously applauded his disloyal utterances. But perhaps the good is hidden in the middle of the sheet; let's turn the page —

What's this? — Boss Cassidy of Queen's County, New York, greeted by a mob of friends on his return from Sing Sing? 'Tis even so, and the band played "My Country, 'Tis of Thee" to enliven his return from servitude. How patriotic!

Here's a lynching and here's a strike puncturing the night with stabs of leaded light; a grog house ransacked; a firebrand, and a million melts in smoke. But there still is hope, for did not the Senator say we are a united people? Let us read further —



No. 403



H. S. Taper Shank Drill



No. 407



H. S. Three Fluted Drill



No. 417



H. S. Straight Shank Drill



No. 426



H. S. Oil Tube Drill



No. 436



H. S. Blacksmith's Drill



No. 444



H. S. Bonding Drill



No. 930



H. S. Paragon Forged Drills Hold World's Drilling Record



Here's a tale of California shivering in the yellow shadow of Japan and crying to the Nation for succor. Note how the Nation answers—New York shrugs her plumpened shoulders, smiles derisively and turns away only to see a flock of alien warships shooting the barnacles from off the Statue of Liberty and the wool off the Woolworth building. Now it is *she* who reels toward the Nation with outstretched arms and begs for help—for adequate preparedness. But we of the wild and woolly West caressingly atop our noses with our thumbs and gaze longingly toward an oversize courthouse for our public park. And here's Texas writhing as Villa stirs her with his bayonet; stragglers drag into San Anton with tales of a Hell's orgy sixty miles away. *Here* is something that will fire the Nation to action. False alarm, Brethren, it is nothing of the sort—the Nation did not rise, and so, while Pershing disengaged himself from an entanglement of crimson tape, Villa slipped through into the mountains of—into the mountains of—of—well, how do you spell it yourself, if you're so smart?

Yes, 'tis a gloomy enough picture we could paint—labor and capital, the East and the West, the North and the South, all mutually making faces at each other. Does it seem that we are a people? No, dearest, the

evidence indicates that we are still just *people*. Have we a national life? No, but we have a very tempting exhibition of national strife, which is really just as good only it isn't advertised. Have we a distinct American spirit? No, but we have enough asthmatic isms to build a tower of Babel.

True, at stated intervals like the Fourth of July and Decoration Day we apply our patriotic sentiment with hose and whitewash brush — thinking that by so doing we have found a substitute for duty and discipline, but throughout the remainder of the year we are devoid of any tangible national spirit or unity. Some seventy years ago a Frenchman characterized us as a country of self-esteem and sufficiency. Today we seem to have been transformed into a mud-slinging arena — every Pullman smoker has its ingrowing patriot, and the anvil chorus rings in every barnyard and boulevard. Each little township plugs its own game irrespective of all else, and only a prophetic optimist dares write as did *The New York Sun* :

"We are not English, German or Swede,
Nor Austrian, French or Pole,
We have made a separate breed
And gained a separate soul."

If we are to believe what we read, we have no separate soul — on the contrary we have only a raucous medley of casts and cults — certainly the superficial observer has ample cause to forecast the end of



No.
407



H. S.
Three
Fluted
Drill



No.
417



H. S.
Straight
Shank
Drill



No.
426



H. S.
Oil
Tube
Drill



No.
436



H. S.
Black-
smith's
Drill



No.
444



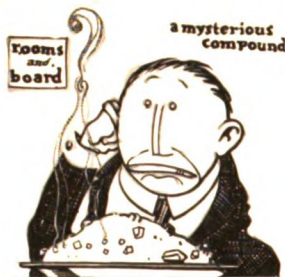
H. S.
Bonding
Drill



No.
930



H. S.
'Paragon'
Forged
Drills
Hold
World's
Drilling
Record



our little experiment in democracy before no distant date.

Such is the dyspeptic picture we might paint, if we had dined not too wisely but too well and were of the type that sees only the holes and never the cheese.

But we forecast a change from things as they *are* to things as they *ought to be*, a realignment of forces that will bring some sort of order out of our chaos of creeds. Listen —

Since the first Continental Congress we have been sending lawyers to legislate for us. It has become a regular habit — if a chap isn't a lawyer he is nix, nothing and not fit for the mileage pass. We have no quarrel with the legal profession, but we cannot refrain from remarking that lawyers are quite the sweetest little trust that ever bloomed upon our shores.

For ages past, legal luminaries have been wrapping themselves in a divinity Bill Shakespeare says is reserved exclusively for kings; like some advertising men, lawyers have urged us to believe that theirs is a gift of the Gods, a compound of mysterious ingredients that somehow gives them a private receipt for legislating. Their training steepes them in the memories of Plato, Pythagoras and Piffle. Precedent is their affianced deity, and if Precedent didn't do it it can't be did — any good lawyer that is true to his faith will tell you that. They prepare themselves for the modern battle by assiduously perusing the dead laws and customs of the past, the

precedents of bygone ages, and the wheezings of Justinian et al. The heathen Chinees worships grandpa and grandma, but the lawyer — not to be outdone — goes back and cavorts with Moses, the great lawgiver.

Now Justinian and Moses, Plato and Blackstone, and all the others, were regular fellows and good friends of ours; we have the greatest respect for their intellects, but we cannot bring ourselves to believe that in the preachings of Pythagoras we will ever resurrect the basis for modern tariff legislation, and we would hazard the guess that old Mr. Justinian himself would be considerably put to it, if he were called upon to cook up a workman's compensation act, or some other legal lubricant for the complexities of modern life.

Such things are not of Law — they are of *Business*, and it is time that we rendered unto Business what is Business' own and unto the lawyer what is the lawyer's own, for the laws of the past are but a meager groundwork for the legislation of the present — a legislation which is essentially commercial in the vast majority of its aspects.

The nature of legislation is changing and with it the nature of the people who should be making it. Of course, our legal friends are not calling our attention to the shifting state of affairs — they have chosen rather to hide their little grasp of today's big problems behind a cloud of gas. By constant practice they have become most expert in blowing as emblance of life into the whitening



No.
417



H. S.
Straight
Shank
Drill



No.
426



H. S.
Oil
Tube
Drill



No.
436



H. S.
Black-
smiths'
Drill



No.
444



H. S.
Bonding
Drill



No.
930



H. S.
'Parago
Forge
Drills
Hold
World
Drillin
Recor

THE MODERN



Catalog 388 Will Show You Several Hm

N CRAFTSMAN

IN these days of machine-made things the old-time craftsman is not lost—for look, tucked away over there in that corner is an old man, a bespectacled, wrinkled old man.

He has been there for twenty-two years now, and through his hands, for final judgment as to fitness, pass the products of those machines. See him smile as he detects a hidden flaw or an unsuspected fault. He is an artist in his craft—an expert who loves his work.

Years ago he was selected for his present position of trust from among his fellow machinists because of the exquisite exactness of his work. The boys say his judgment is too harsh and too exacting, but his is the type of craftsmanship that can countenance nothing but the perfect.

He is an inspector and but one of many such craftsmen who combine to make certain that

'CLEVELAND' DRILLS WILL DRILL
MORE HOLES PER DRILL

THE
CLEVELAND TWIST DRILL COMPANY

NEW YORK CLEVELAND CHICAGO

...dred Fruits of This Modern Craftsmanship



No.
426



o.
3/6



No.
444



No.
930



H. S.
Oil
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H. S.
Parago
Forges
Drills
Hold
World
Drillin
Record

carcasses of bygone days and have successfully palmed off twenty tons of Congressional Record as a substitute for action.

To date, we have all stood by and borne it — not especially because we liked it but because we have been trained to think that no one could do it like a lawyer and because no one else offered himself for the service. It has always been so, and no doubt the lawyers think it will ever be so. They have become blinded by the long success of their innocent little hoax, and have not seen the writing on the wall.

Now, we believe in laws and lawyers — it is their training that we complain of. It is out of tune with the spirit of modern times — it is a perfectly good round peg, but in the square hole of present-day needs. The lawyers have served their country well, they have done their little bit and have sung their little song, but their methods are worn and antiquated — as the best of methods must become in time. Even as you and I outgrew knickerbockers and the sweetest curls you ever saw in your whole life, so have we as a Nation outgrown the confines of a learned look, a flowing black tie and a cutaway —

We are ready for a business suit.

No, we have not forgotten that lawyers fathered our country, and we still revere the name of Washington at Valley Forge, and of Lee and Lincoln at Appomattox — Patriots all of them. But neither have we forgotten that it was Robert Morris, Ben Franklin and Jay Cooke — *Business Men* — who made possible the successes of our heroes. We hear little of these men, for business in those days had an inconspicuous seat in the hall of fame. But the happenings of the last few months indicate that Business is no longer decorating a back pew in the public consciousness. On the contrary, the Nation is slowly grasping the fact that Business — Industry — is the trump card at the game of Nations, and that Diplomacy, Pomposity and Precedent are really incidentals. Within a few more years, we will apply this new-found learning, and our country will then be the scene of a bloodless revolution that will end

the reign of the Legal Luminary and will place the reins of Government in the hands of Business Men. Then you and I will be proud to say, "I am an American Business Man—one of the *foster* fathers of our country."

Ah, ha! Well said, varlet, but hast thou the papers to prove thy case? Be advised that thou fliest in the face of law and order and art liable for contempt, lese majeste and chicken stealing on the king's common.



Knowest thou that?

Yea, most noble subscriber, but I have the papers. Come look at them—compare the record of our Congress for the past few months with the record of the Awakened Business Man for a similar period of time. Then choose which makes the truer, better, readier statesman of the two—

It was some twelve months ago that the first intimation of our awful unpreparedness reached the public ear. After some preliminary warming up, we decided that we must have some of that preparedness stuff and we intimated as much to Congress. Congress—those blue bloods of our democracy—told us that they were much inclined to give us adequate preparedness and were even then deciding how many billion they ought to dedicate to the cause. At our request they pledged themselves to abstain from Pork and professed to have imbibed deeply of the Patriot Spirit. No longer was there to be North and South or East and West; for once we were to be a united whole with preparedness our sole and only aim. All this they told us, and we believed them. We read yards and yards of flag-waving speeches that were oratorical gems. Many a mother saw her son sitting on the right hand of Washington as the savior of his country, and we were all quite enthusiastic over the outlook. Evidently Congress at last had forgotten Precedent and was out to make good.

Then as the clouds of verbal battle hung low, obscuring the view, Congress up and voted some sixty centimes for preparedness while



No.
436



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Black-
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Drill



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H. S.
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Hold
World's
Drilling
Record



they labored long and lustily over a Rivers and Harbors Bill, sixty per cent of which is the most toothsome sort of Pork that ever greeted the nostrils on a Saturday night—it manages to find \$10,000 for a useless pier in Delaware on which \$387,000 has already been lavished but at which no vessel has yet had the privilege of anchoring; it refuses to honor a request of the Secretary of the Navy that the channel of the East River,

New York, be dredged that our battleships may reach the Navy-yard with greater facility, and yet it gives such projects as Cold Spring Inlet, Pamunkey River, Fishing Creek, Swift Creek, and other commerceless streams, a golden smile of welcome.

Oh, true, in a hasty and unstudied moment Congress did let go of an Army—a paper army—but they have not noticeably enlarged the scanty personnel of our Navy, the ten new destroyers which they presented to us in June are about enough to protect three battleships, and when our poor little naval aero squadron compares its gift of 130 planes with the 1000 or more in use by the British Navy alone, it must hide its face in shame. And all this consumed months of time and at best has given us but an emasculated preparedness. We asked for a full suit of preparedness, and Congress said, "All right, here's the shoestrings and here's a nice pink tie—now you run around and annex the rest of the stuff as best you can."

In short, Congress failed in the pinch.

But such things have happened before, and the only reaction has been that a large number of our Washingtonian friends have failed to make the return trip in the autumn—but today the effect has been astonishing, and we are emboldened to stand up here before all of you and make the statement that the American Business Man is waking up—Rip Van Winkle is stretching himself—Congress is no longer the only engine of action—now there is another and more modern and efficient machine—it is the Business Man himself.

When it became obvious that Congress would or could do but little to further the cause of National Safety, an army of business men and engineers stepped forward. Within two months they perfected an organization such as Congress could not duplicate in thrice the time; within another three months they will give us a survey of our industrial strength upon which all future preparedness plans must be based. We have told at length of this move. No one questions its need, and yet Congress, with all its professions of Patriotism, could not find the time nor the means either to initiate the task nor to vote these Business Men the funds for the accomplishment of their work. Perhaps it's unintentional that the formal statement of "What the Engineers Are Doing for Industrial Preparedness" should read:

"All elements of the Nation's life should support this patriotic and democratic work—the manufacturer, the business man and the working man."

You will note, in this statement, that Congress is not asked and apparently is not expected to co-operate. It is not mentioned as a considerable element in the Nation's life. It is sidetracked, and the Business Man takes precedence. 'Tis an omen.

To our way of thinking it is a self-confessed indictment of the mental caliber of our legislative bodies that they could find no funds for the furtherance of this splendid movement for Industrial Preparedness and yet could find both the time, the inclination and the wherewithal to excavate a nameless creek in a nameless wilderness.

But the indifference of Congress showed plainly how thoroughly awake is the Business Man to the responsibilities which rest upon him in our modern scheme of things—not only did he initiate this movement, but he is financing it as well. His citizenship is rubbing its eyes, and why? Two letters which came into our hands today tell the story best. The first is from a large manufacturer, not a hundred miles from here, who was asked to contribute to the cause of



No.
444



No.
930



H. S.
Bonding
Drill



H. S.
'Paragon'
Forged
Drills
Hold
World's
Drilling
Record

industrial preparedness : —

"We have been delayed somewhat in replying to your letter, as we wish to give this whole matter very serious consideration. The conclusion we have reached is that work of this sort is one of the chief functions of Government and should be financed by the United States Government in Washington rather than by individual subscriptions.

"Two of the fundamental and primary duties of the Government, as these are pointed out in the preamble to the Constitution of the United States, are — 'to provide for the public defense and promote the general welfare.' It seems to us wrong in principle and dangerous in practice for private individuals to undertake to relieve the Government of the responsibility for adequately performing these functions.

"We, therefore, believe that Congress should not only appropriate funds to finance this great work, but also should remunerate the engineers to some extent at least for the services they have so patriotically and unselfishly volunteered to render.

"We should appreciate it very much if you will let us have your views on this subject."

And here is the reply—hot from the bat of an Awakened Business Man : —

"Answering you as to my views in regard to the situation as you outline it, I can only say that if I thought the ship was taking an undue amount of water and liable to sink, I certainly would believe that the crew would be the proper ones to man the pumps; but supposing that they did not do so, I would also think the passengers would not display very good judgment if they elected to run the risk of drowning rather than to do some work which was clearly outside of their immediate province."

And the reply from the first letter writer came in the shape of a substantial evidence of an awakened patriotism plus this note : —

"I certainly cannot but agree with the views expressed in your letter of the 11th, and I hope after the ship is saved that the crew will get what is coming to them."

Yes, Business has come out of its dreams to find that it is the very backbone of our National life and that upon its shoulders rests the accomplishment of our destiny. During its sleep, its servants have been guiding the ship of state but poorly, and now Business is manning the pumps. We believe that ere long the people as a whole will recognize this, and then Business will be given its just deserts.

All this, however, is but a single example of the awakening conscience of the American Business Man. There are others, and each contributes its quota of evidence to prove that Business is realizing its true place in the affairs of the Nation and is proving true to the responsibility. To wit:

When Congress first met they were petitioned for an ample supply of aeroplanes. For months it looked as though they would turn deaf ears to the emergency; our army in Mexico suffered for their lack — apparently the fact that an aeroplane is to an army what a periscope is to a submarine meant nothing to Congress, and so they whistled and piffled and fussed around. But in the meantime, through the Aero Club of America, the Business Man was called upon to fill the void left vacant by Congressional indifference — and he responded immediately to the tune of over \$10,000 as a nucleus for a \$100,000 aviation fund, two high-powered aeroplanes, nineteen trained aviators, and facilities for training aviators in thirteen States. In light of these facts, which is the readier statesman — Congress or Business?

Since Adam was a youth in abbreviated trousers Congress has been playing with the tariff — a distinctly *business* subject. Today there is talk of taking the tariff out of politics — a little straw that shows the reins are slipping from the stiffening fingers of Grandma Congress.

There are some who will jump back in horror at the outlook — Business in the seat of Government — unthinkable! But there is no need for consternation — Business has changed — it has tasted full well and sufficiently of the fruits of unrighteousness and has put its house in order.

Today Business is one of the cleanest of American sports. The Business Man is not the crooked money changer of the past—he is a power in his community—a power for good, and he does honor to his changed estate. He has become a shareholder in the Government and he is jealous of his trust.

Business is finding the time and the inclination to give us city governments founded on business principles, Chambers of Commerce both local, state and national are picking Men to lead them and these Men are leading. Advertising Clubs throughout the land are fighting for Truth — truth in Adver-



tising, in Business and in Government; we have Business Men in hundreds of semi-national and civic organizations devoted to the betterment of the Nation and the community. Charities have been put on a business basis, and the doctrine of "I am my brother's keeper" is finding a place under every roll-top desk. Business has learned that to be "better off" is not to be better and has proven its sincerity by liberal profit-sharing plans.

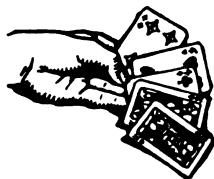
The Wall Street Journal some time ago cried for more piety in business. If 'tis true that "by their works ye shall know them" we believe that today there is more piety in Business than ever before — within the past year we have courted indigestion and starvation at several public functions known as banquets, and it was seldom that the speaker of the evening did not mention the Bible, Conscience, Faith, and similar pious things. Last week in our own little burg 700 Business Men gathered together to hear a Jewish Rabbi address them on "Religion in Business". This man spoke openly of the Ten Commandments and "truth" and "morals" and we listened and applauded as never before in the history of the organization — ten years ago that Rabbi would not have been asked to address us; if he had done so and spoken of morals, etc., we'd like as not have smiled knowingly and left early.

Business has changed. Business is not split by creeds nor sections — it has no North nor South nor East nor West — it is a unity, and it has shown itself most alive of all our Nation's units to the needs of the present. When our country called, Business did not stop for Pork or Precedent, but — like the young lady who lost a bet for a kiss — met the emergency face to face.

Without plan or schedule, Business has been progressing toward its preappointed goal. On the way it has found time to do a little there and a little here. It has sinned and been sinned against, but now it has cleansed itself and is ready with unity, initiative, punch and pep to make us the leaders of the Nations in word, thought and deed — all it needs is an abiding Piety, Sincerity and Faith, and someone to sound the toxin as did Governor Whitman when he said —

"Let us mass for America as we have massed for our own profit; let us bring together the best thoughts of the trades and the professions, and forge a great bolt of patriotism that will tear through the dead walls of cynicism and indifference. Let us preach to the young the gospel of Americanism. Let us renew our faith and our devotion to the land and to the cause for which many who have gone before us gave the last full measure of devotion."

This is the new call to arms. It sounds in every business organization throughout the land. It is the cry of our Nation — reborn.



A Definition of Fair Play

TODAY practically all we manufacturers have a similar problem — regardless of our products the demand for them far exceeds our production. Under such circumstances it is manifestly impossible to completely satisfy all — second choice must be to create a plan of distribution that will be sound, equitable and impartial — one that will never serve a favored few at the expense of the many.

To keep the drill presses of all Cleveland customers running at capacity and to so distribute Cleveland drills that no man shall enjoy a surplus supply to the detriment of any other man, is the aim of our distributing plan.

It does not always work to perfection — sometimes we err as to what constitutes a surplus or an insufficient supply — that's because we are drill manufacturers and not professional judges.

But we believe that Cleveland customers recognize that we are endeavoring to play fairly, squarely and with all cards on the table.

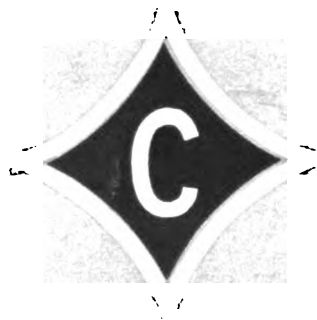
And the fact that many of them are helping by anticipating their requirements is proof of their confidence in our definition of what constitutes fair play.

THE
CLEVELAND ♦ TWIST DRILL
COMPANY

NEW YORK

CLEVELAND

CHICAGO



7220
THE NEW YORK

PUBLIC LIBRARY

ASTOR, LENOX
TILDEN FOUNDATION

DRILL CHIPS

for
AUGUST ✓



Cleveland

Amen!



I wish't I was a little rock
A settin' on a hill,
An' doin' nothin' all day long
But jest a settin' still.

I would n't eat, I would n't drink
I would n't even wash;
But set and set a thousand years
And rest myself, begosh.

—*Judge*

DRILL CHIPS

AUGUST 1916

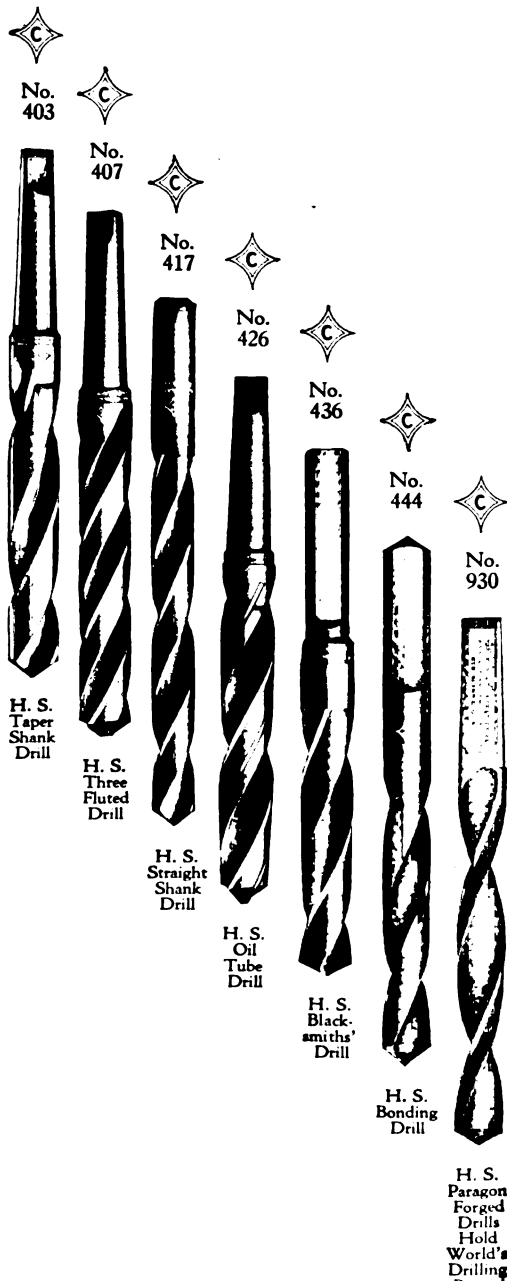
◆ DRILL THREE ◆ CHIP EIGHT ◆
THE CLEVELAND TWIST DRILL CO.

C. H. Handerson, Editor

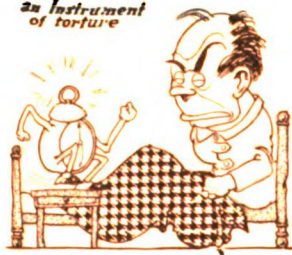
MONKEYS OR MEN?

ONCE AGAIN we have with us some of these so-called "friends" of the Common Peepul. It is awful nice to have them about — in fact we would feel almost lonesome without them, so long have they been tagging at our heels. Friends are a great institution; we all need friends, although some men have been killed by their over-abundance. Caesar, for instance, found friends a dangerous luxury, and many a man since the time of the toga has been driven to drink by a superfluity of well-wishers.

The friends of the Common People are particularly notable for their numbers — for quantity rather than quality. Every day you will find one or two of them up on a soap-box rehearsing the general jaundiced condition of the downtrodden masses — which is our dear selves. And they always have with them a remedy for all our ills, which they offer as "A Sure Cure for Hired People." Oftentimes their remedy is harmless enough, but occasion-



*an instrument
of torture*



ally it is a slow-acting poison. Such is the case today.

Through the machinations of a certain Mister Tavenner, some of these shallow-thinking "friends" are engaged in Congressional manipulation with the object of making it a heinous crime to use modern efficiency methods in the production of Government work. In fact to put a stop-watch in a factory engaged in work intended for Government consumption would — if they had their way — be punishable by a fat little fine and imprisonment for life, or maybe longer. They would make it a prison offense, if you please, to determine accurately how much a man should receive for a day's work, or for what work a man is best fitted by nature, or what should constitute a fair day's work for the average individual. In other words, they would knock galley-west any efforts of our Government to establish a decent amount of efficiency in its departments, even though in the past such efforts have met with the unanimous approval of the employees involved.

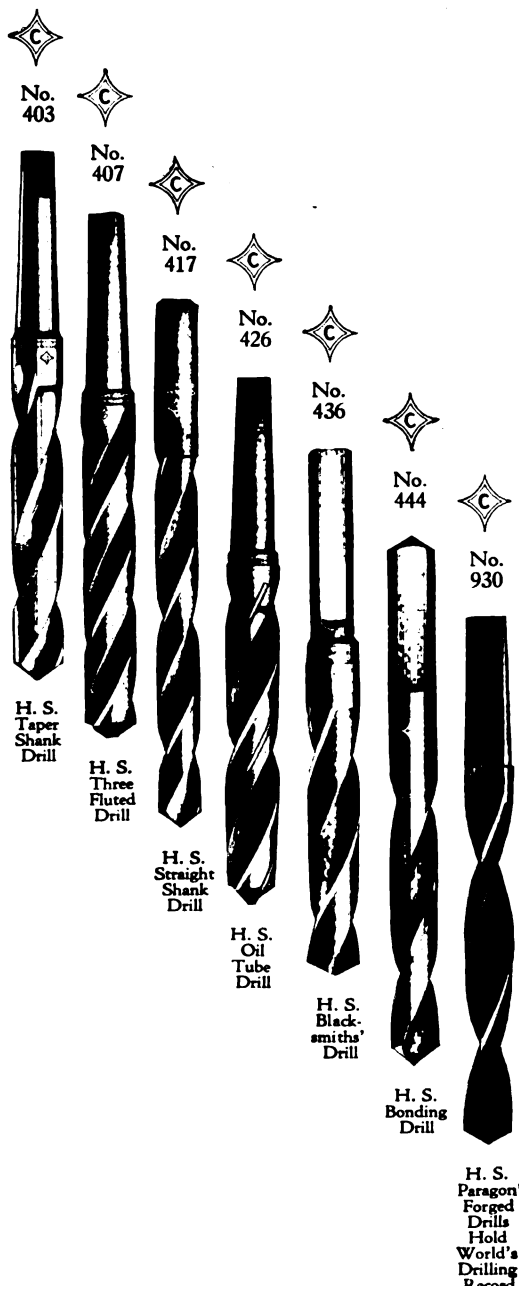
By some mental gymnastics these new-found "friends" of the laboring masses have discovered that the stop-watch of

present-day efficiency systems is an instrument of hideous torture, beside which the thumb-screw of the Inquisition was but a flatulent flea bite.

It may be that Mr. Tavenner and his coworkers are sincere; but if so, they are of the sort who would complain if the street car fare were reduced — because, forsooth, such action would likewise reduce the laborer's opportunity to save by walking to and from work.

While labor is as wise as any other unit of our era, at times it is peculiarly unfortunate in the selection of its mouthpieces. Too often these mouthpieces apparently have no headpieces operating in conjunction with them, and — as in the present instance — they condemn the very thing that is winning for their colleagues increased health, wealth, and happiness.

Since history rang up the curtain of Events there have been those pea-brained pests, who always protest in strident tones against anything that might possibly bring about greater efficiency in the world — when Samuel Arkwright invented the power loom he was forced to hide it, because certain of these "friends" of labor instigated a riot against this devilish instrument



which would rob the weaver of his bread. Yet to date we have not heard of any considerable number of weavers starving in a garret—in fact, the last word from the Weaver's World was that everything seemed to be in a very prosperous condition.

And when the harvesting machine bobbed upon the surface of civilization, there were those present who condemned it utterly as a thorn in the side of the hardworking farm laborer. But in spite of it, the farm laborer of today is worth several times his former price—the harvesting machine increased the efficiency and value of the farm and the farmer in like ratio.

When Fulton launched his steamboat, more “friends” jumped up and fought it, because it put labor in fearful jeopardy—yet, but a few years ago, the writer worked as a deck hand on a freighter and made more in a month than the deck hand of Fulton's time made in a season.

Likewise, when the sewing machine and the linotype appeared, there was a small revolution in certain circles, because again labor was to be robbed of its means of livelihood by the onward march of efficiency. But today this same labor is in a better position mentally, morally, physically, and financially than ever before.

And would you believe it—the first man to wear a silk hat in the streets of London was stoned! Yet think where we would be today without the silk hat. With it the dignity and impressiveness of the merest fishmonger is increased a full hundred percent, and without the glossy dome what a helpless lot would be that of our diplomatic corps!

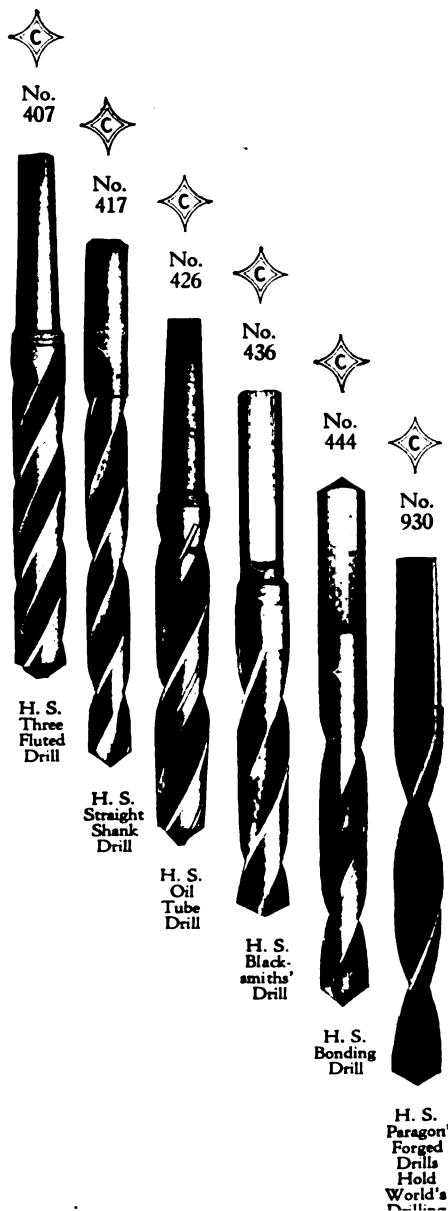
Yet all these milestones in the progress of efficiency were condemned in their early days. Each labor-saving device, each invention, each method designed to increase the laborer's efficiency has been fought tooth and nail by these "friends" of the Common People — though sooner or later they have been forced to admit that each, in turn, increased labor's value to itself and to the world at large. There are always those leeches on the limb of progress who damn all innovations indiscriminately, but are soon well content to profit with their fellows from the good that these new things bring.

In merry England before the war, production was hemmed in and opportunity arbitrarily limited by rules and regulations established by "friends" of labor. Then thousands walked the streets in idleness and hunger; London's bread line surpassed all others in size and wretchedness, and her slums were world-famous. But with the advent of war, these bonds which circumscribed the efficiency of labor were cut, each man was freed to earn to the maximum extent of his capabilities — and now any story of England tells of the increasing wealth and happiness of the laboring classes.

Today in our own country we see the Tavenner bill attempting to limit the efficiency and opportunity of the laborer. We have no doubt that the men who are promoting it are honest in their endeavors,



The Fate of Innovations



though, to ye Editor's mind, they are either blinded by the headlight of progress or are blasphemers against the God who set up as the foundation-stone of life the law that only the fittest shall survive. The fittest are the most efficient, the most capable, the most worthy of perpetuation. Look anywhere and you will see the working of this decree —

Away back yonder in the abyss of time there was a critter that staggered around under the name of the *Dinosaur*. This particular animal was as big as a city hall, it was bigger than all other animals — it was to little man as the labor element of today is to the capitalistic group. Yet it cashed in its checks because it was as inefficient as a smoky lamp, because it flew in the face of the first law of man and refused to mend its ways. Today you and I gaze at its plaster-of-Paris effigy in our museums as a monument to the fact that mere size and bulk are valueless without attendant efficiency.

The American Indian was a heap big item in this neck of the woods until he crossed swords and intellects with the greater efficiency of the early settlers. Today this same Injun is a zero in the march of civilization. He was strong, but he was not efficient — ergo, he passed on to the happy hunting grounds.

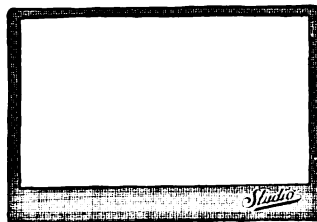
If efficiency as a principle militated against either the mental, moral, monetary or spiritual welfare of mankind, it would be wrong, it would be useless, it would be inefficient, and it likewise would pass on. But efficiency has proven its right to exist, it has proven the wisdom of the ages by advancing the race and the individual from monkeys to men, and from the stone age to the age of gasoline and champagne.

You and I know that civilization advances and the condition of our people improves only as fast as the store of the world's goods is increased — it is only because the output of wheat is immense that you and I are able to eat white bread three times a day. Yet if Mr. Tavenner's bill were carried to its logical conclusion, to curtail the production of wheat would be an incalculable boon to us all. You and I know that the price of the Ford automobile is possible only because of the vast quantity and efficiency of its production — yet to carry this contemplated legislation to its proper end would be to reduce the efficiency of its production — together with the quantity of its production — and thereby the price would be raised.

All those in favor of this action signify by rising. The motion is lost — unanimously.

If Mr. Tavenner's reasoning is correct, to let the railroads waste their incomes in riotous profusion would tend to promote the country's welfare. As a matter of fact, however, you may remember, when the railroads of the country petitioned the Interstate Commerce Commission for increased rates, this Commission denied the increase until the railroads had proven that they could not increase their incomes *by improving their efficiency*. If efficiency is good for the railroads, why is it such a bad thing for the arsenals, the navy yards, and the post office? Echo answers "Why?"

If efficiency systems as we know them in modern factory practice are wrong, why do they almost invariably advance both the



Photograph of those favoring the increase of price



No. 417



H. S. Straight Shank Drill



No. 426



H. S. Oil Tube Drill



No. 436



H. S. Blacksmith's Drill



No. 444



H. S. Bonding Drill



No. 930



H. S. Paragon Forged Drills Hold World's Record

A PROOF C

WE speak in behalf of all manufacturers who have adopted a course identical with ours in dedicating every facility—every man and every machine—to the service of our customary trade.

In spite of this precaution, the demand upon us has been so great that we, for one, have found it impossible to maintain our prompt delivery service of former days.

This irregularity is not caused by any lack of appreciation of your difficulties—it is the result of a sheer mechanical inability to produce more *good* tools than our increased facilities are prepared to handle *properly*.



CLEVELAND
CO

NEW YORK

SINCERITY



We understand full well how intense is your need for tools and we are pitting every ounce of our production against the incoming tide of your demand.

We are sincere in our desire to serve you—if we were not, we could long ago have accepted a temporary but extraordinarily

profitable type of business as a substitute for yours. But we didn't.

Shouldn't the mere fact that we chose to forego this extra profit be proof sufficient that we are genuine in our desire to serve you and that we are now doing our level best to supply you at the time and in the quantity you want?

IE
TWIST DRILL
PANY
LAND CHICAGO



No.
426



H. S.
Oil
Tube
Drill



No.
436



H. S.
Blacksmiths'
Drill



No.
444



H. S.
Bonding
Drill

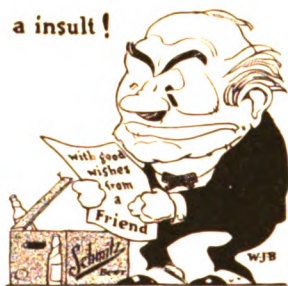


No.
930



H. S.
Paragon
Forged
Drills
Hold
World's
Record

a insult !



wages and the health of the employee? To the writer's accurate knowledge these systems operating in three different shops have increased wages twenty-five, thirty-five and forty percent respectively. Is it wrong to increase wages? Is it wrong to give the laborer increased wage with shorter hours and better health? If so, efficiency — the cause of this increase — is wrong in

like degree.

After all is said and done, wages are only a symbol — they are only a means of exchanging one man's product for another man's — and if both men's product is decreased and their labor made more difficult by inefficient tools and methods, how is either man to have more? The only way that this world can have more is to produce more — and that means increased efficiency.

So why do these "friends" of labor seek to better labor's condition by decreasing their supply of the world's goods? We will pause for an explanation.

Mr. Tavenner's little amendment also makes the bonus a thing to be despised. Personally we would rather work for a bonus than for a straight wage, because it literally puts a man in business for himself, it gives him a just reward for increased activity, it is a tangible, spendable fruit of extra ability and perseverance. To legislate the bonus into the discard is an insult to all manufacturers who have striven for equitable wages and to every working man who wishes to earn more or be more than the common run of mortals. If we were to carry this phase of the Tavenner bill to its logical conclusion, we would put a premium on the corner loafer, and the editor would soon be able to buy out John D. himself.

It seems strange, too, in these days when patriotism runs deep and swift, that any group of men should seek ways to hamstring

the efficiency of our Government's navy yards, munition plants and other elements of our country's defensive armor. If this action of theirs is patriotism, surely we ought to erect a fancy statue to the men who assassinated Lincoln and McKinley, for they too struck a blow at the efficiency of our country.



But this is not all. Do you think that these dear "friends" of the working man desire to threaten efficiency management only in *Government* works? *Not on your sweet life*—when you set out to sell a man a bill of goods, you first palaver with the office boy a bit to reduce him to a state of subjection before you tackle the Big Boss. Such are the tactics of these "friends" of the working man — the present effort to curtail production and limit efficiency is merely a skirmish at the outposts; when this tilt is won, the State Legislatures will be swung into line with the same stuffed club, and the process will go on just as long as its sponsors can hoodwink the voting masses. Before the true effects are felt, they will be able to cover every manufacturer and laborer with their blunderbuss and say, "Halt friend, you are too efficient; you are producing too much; here take this stone hammer and use it instead of your steam one; ride to work on a stage-coach; discard your twist drill for a pointed nail, for now we are going back to the stone age and efficiency is a crime — to produce fruitfully, like the fig-tree of the parable, is to be a criminal."

Enough of argument — there are plenty of examples to prove that the first law of the world — which has ever favored the efficient — is as much on the job as in the past; and there are plenty of examples to prove that it is benefiting mankind as lavishly as in the past. But, regardless of this fact, the Tavenner bill is being given most favorable consideration in the marble halls of Washington; Congress is toying with the hands of the clock, thinking thereby to stop time in its flight.

It is time we awakened. If the change from the scythe to the reaper was wrong, then efficiency is wrong; if the stone hammer is better



No.
436



No.
444



No.
930



H. S.
Black-
smith's
Drill



H. S.
Bonding
Drill



H. S.
Paragon'
Forged
Drills
Hold
World's
Drilling



than the power forge, then efficiency is wrong; if the wages, health and condition of the modern machinist are not better than those of the brickmakers of Egypt, then efficiency is wrong; if the gibbering monkey is to be envied, then let's be consistent and revert forthwith to the age of trees and tails; let's insist that the ways of our fathers were right, and that civilization, progress, increased happiness, and wealth both for the individual laborer and for the mass are all wrong in fact and principle, and that the father of these benefits — increased efficiency — must go the way of all flesh.

PULLMAN PESTS

FOR months past our hair has been falling out. We say "hair" advisedly, for at the present moment the plural of the word would be a sad misnomer. Moreover, we are getting squint-eyed and are cultivating a lump on our back that looks for all the world like one of those Parkerhouse rolls such as they serve at most high-grade eating houses.

Yes, we have all the symptoms of a scientist of note. And properly so, because for these many weeks we have been making a scientific study of the map of our dear old U. S. A.

Well sir, this microscopic survey has developed some mighty interesting facts — one in particular, we believe, should be utilized by the Government. 'Tis this —

As you ride through Indiana or any other State infested with railroad tracks, you will be smitten with the remarkable fertility of the soil. On the other hand, out in Utah where railroads are more or less of a luxury, we have only the Salt Sea and other signs of an inhospitable Nature. Therefore 'tis simple to see that railroads make for fertility.

At first glance the reason for this may not be obvious — and we are forced to admit that for a long time our large and rapidly decreasing editorial staff were likewise unable to locate the correct answer. But now

we have it, and we present it to the world with full consciousness that we are thereby conferring a benefit on mankind that will make Pasteur and Edison look to their laurels as creditors of humanity.

Gentlemen, the cause of the great fertility of the soil in States that are thoroughly criss-crossed by railroads is the *Pullman smoker*! It must be obvious to even the most listless reader that the exceptional mental fertility displayed by travelers in Pullman smokers is cramped by the narrow confines of the space allotted to these sons of Dame Nicotine. Therefore this fertility naturally seeks larger quarters, it oozes through the cracks and doors and out of the windows to fall upon the upturned face of the neighboring prairies. There it is caught and absorbed — hence the great and increasing fecundity and fertility of the prairie!

For instance — let us suppose ourselves in one of Mr. Pullman's palace cars. It's midnight and we have just collapsed sufficiently to fit snugly within "Lower 10." The prospect of an untroubled sleep soothes us and our eyelids droop until we are gone.

Ah, but not so fast — nine times out of ten just as we are on the brink of Eternity, a fat man enters the car. He is most always a fat man and generally florid and forty. No sooner does he squeeze his bulk through the entrance way than he bawls out, "Say, George, when does this train get to Erie?" or "Say, George, which is my berth?"

Inasmuch as the acoustics of a Pullman coach in the wee sma' hours of the morning are marvelous, these resonant cries jar us all back to cussing consciousness. We lie staring at the ceiling and, as his voice rumbles back and forth like that of a depot crier, we can almost see his Adam's apple prance up and down in sheer ecstasy at its own efficiency. As our new-arrival lumbers down the green-curtained pathway, you will hear him stumble over a few pairs of straying shoes, and you may perhaps hear some heated language as he nearly amputates some lean party's extended leg.

The Pullman Pest is in our midst.



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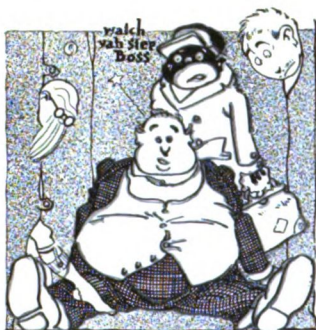
No.
930



H. S.
Bonding
Drill



H. S.
Paragon'
Forged
Drills
Hold
World's
Drilling



With a few well-pointed remarks concerning fools we have met, we again roll over only to waste the balance of the night in fretful tossing. At 5:30 o'clock we give it up as a bad job and enter the combination smoker and scrub-house for the morning's ablution. But we are late. Already the Pullman Pest of the previous evening, or his double, is there. He is always there, and he immediately gets into action with one of his one-pounders —

"Nice weather we're having, aint it?" That will be his initial greeting or perhaps a few commonplace remarks concerning the roadbed and its inequalities. Rest assured, however, that this greeting is nothing more than a warning shot across your bows. It is a mere gentlemanly salute or a preamble to the main attack.

If you are wise, you will recognize the symptoms and flee at once; but if you are polite, you will agree with him rather than completely ignore his pleasantry. To recognize his existence, however, is fatal, for he invariably interprets recognition in the nature of encouragement and hastens to swing his fourteen-inch vocal rifles into position to give you a running broadside of near information and mis-information about everything from the Socialistic influence in the German government to the best method of removing grease spots.

To deny his allegations is to invite a torrent of oratory that makes Bryan's best seem like the mouthings of a month-old babe. To agree with him is equally ruinous to the peace and quiet of the place. To read or to enjoy an after-breakfast cigar within his range is an impossibility. He dominates the little smoking-room with much the same grace and diplomacy as a bull would use in entering a china shop. He is the Pullman Pest—the overweening fertility of whose brain fathers the fertile prairie. He is the man of unlimited knowledge. He is the man of the tireless jaw. He is Alpha and Omega. He is the Encyclopedia Britannica and Ridpath's History of the World.

Gentlemen, let me introduce you to the ever-present companion of our travels, a man who, like the poor, is always with us.

Gentlemen, the Pullman Pest!

C. T. D. Immortals



O, gentle reader, we did not hire Charles Dana Gibson to make this drawing for us — listen girls, if you don't stop shoving I will have to throw the whole bunch of you out and then no one will hear the history of this, the youngest of our regular road cleaners. Besides he is married, so you can get your money back at the door if you wish, and anyway, this picture doesn't look like him—it's the one his wife sent us—so you needn't get so fussed up about it.

Nigh onto nine years ago come this September, John floated in upon us. At that time they had just hired the editor and needed additional help on the pay roll, so they put John on the force. For three long years he lingered among the coin counters. Then someone presented him with a fountain pen, an order pad and a ticket on the Q. & C., and John departed for south of the Smith and Wesson line. (One of those embarrassing typographical errors again!) Since that notable day we have been forced to build several shiny new buildings. J. M. takes the blame for a couple of them and also for the fact that the home of Coca Cola has joined the Loyal Order of the Sons of Sahara.

Among the multitudinous things for which he is famous is the finest Collie Dawg that ever shed a hair on a Sunday suit. The dawg sleeps on the billiard table — leastwise it does when J. M. isn't practising the art. Between billiards and the dawg John has found time to establish a reputation for straightforwardness and square dealing that makes him trip over the "Welcome" on the mat from Palm Beach to Asheville and from San Anton to Memphis.

Gentlemen, a toast and coffee to John M. Hirt — the Dixie Demon of The C. T. D. Co.



No.
930



H. S.
'Paragon'
Forged
Drills
Hold
World's
Drilling

DRILL CHIPS' TABLE of CUTTING SPEEDS

Feet Per Minute		30'	40'	50'	60'	70'	80'	90'	100'
SIZE		REVOLUTIONS PER MINUTE							
Number	Decimal								
1	.2280	503	670	838	1005	1173	1340	1508	1675
2	.2210	518	691	864	1037	1210	1382	1555	1728
3	.2130	538	717	897	1076	1255	1434	1614	1793
4	.2090	548	731	914	1097	1280	1462	1645	1828
5	.2055	558	744	930	1115	1301	1487	1673	1859
6	.2040	562	749	936	1123	1310	1498	1685	1872
7	.2010	570	760	950	1140	1330	1520	1710	1900
8	.1990	576	768	960	1151	1343	1535	1727	1919
9	.1960	585	780	975	1169	1364	1559	1754	1949
10	.1935	592	790	987	1184	1382	1579	1777	1974
11	.1910	600	800	1000	1200	1400	1600	1800	2000
12	.1890	606	808	1010	1213	1415	1617	1819	2021
13	.1850	620	826	1032	1239	1450	1652	1859	2065
14	.1820	630	840	1050	1259	1469	1679	1889	2099
15	.1800	638	851	1064	1276	1489	1702	1914	2127
16	.1770	647	863	1079	1295	1511	1726	1942	2158
17	.1730	662	883	1104	1325	1546	1766	1987	2208
18	.1690	678	904	1130	1356	1582	1808	2034	2260
19	.1660	690	920	1151	1381	1611	1841	2071	2301
20	.1610	712	949	1186	1423	1660	1898	2135	2372
21	.1590	721	961	1201	1441	1681	1922	2162	2402
22	.1570	730	973	1217	1460	1703	1946	2190	2433
23	.1540	744	992	1240	1488	1736	1984	2232	2480
24	.1520	754	1005	1257	1508	1759	2010	2262	2513
25	.1495	767	1022	1276	1533	1789	2044	2300	2555
26	.1470	779	1039	1299	1559	1819	2078	2338	2598
27	.1440	796	1061	1327	1592	1857	2122	2388	2653
28	.1405	816	1088	1360	1631	1903	2175	2447	2719
29	.1360	843	1124	1405	1685	1966	2247	2528	2809
30	.1285	892	1189	1487	1784	2081	2378	2676	2973
31	.1200	955	1273	1592	1910	2228	2546	2865	3183
32	.1160	988	1317	1647	1976	2305	2634	2964	3293
33	.1130	1014	1352	1690	2028	2366	2704	3042	3380
34	.1110	1032	1376	1721	2065	2409	2753	3097	3442
35	.1100	1042	1389	1736	2083	2430	2778	3125	3472
36	.1065	1076	1435	1794	2152	2511	2870	3228	3587
37	.1040	1102	1469	1837	2204	2571	2938	3306	3673
38	.1015	1129	1505	1882	2258	2634	3010	3387	3763

Additional copies of this chart on request. Ask for "D. C. Chart No. 2." (To be continued.)

Would n't one
of the men in
the shop enjoy
reading this ?

Why not pass
it on to him ?



726 1911

9

Druck.

DRILL CHIPS

THE NEW YORK
PUBLIC LIBRARY
ASTOR, LENOX
TILDEN FOUNDATION

SEPTEMBER

(Cleveland)
VFA

Warning !!!

THIS is our Vacation Number. It hasn't a sensible thought in it. We *guarantee* that. We purposely made it light reading so that it would go under a one-cent stamp.

DRILL CHIPS

Published by THE CLEVELAND TWIST DRILL CO.
DRILL THREE SEPTEMBER, 1916 CHIP NINE

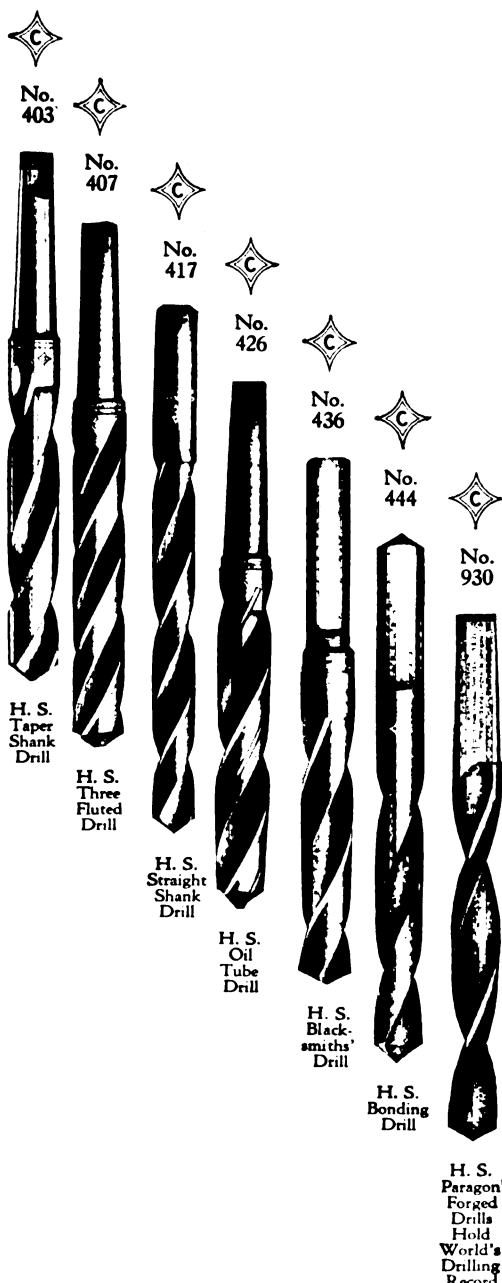
C. H. Handerson, Editor

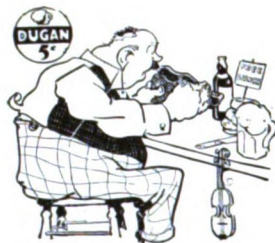
"MOVIES"

A Great Moral Uplift

YOU see it was this way—I didn't have anything to do until train time, so, rather than clutter up the street, I sifted into the illuminated lobby of a near-by picture show.

Speaking of picture shows reminds me — did you ever notice how *cordial* the ticket seller is at a picture show? Remarkable, isn't it? Usually she is reading a paper-backed novel and chewing a cheekful of Mr. Wrigley's digestive ferment. When you step up to her window and make fool motions through the loophole in the center, she gazes languidly out at you with a tired expression in her eyes that makes you really sorry that you troubled her at all. After sizing you up — to see if you will fit in the seats, I suppose — she presses a button, and your ticket skids out at you like a ham sandwich at a rush-order restaurant. The process is as full of human interest, sentiment and salesmanship as a cast-iron door knob.





But, to continue the story—after we had annexed our ticket, we pushed through the red curtains marked “Entrance,” and waded around in

the gloom for a couple of minutes before we got our bearings. Then a cute little fellow, who looked as if he wore a wrist watch, guided us down the aisle and shoved us into a line of pews. After climbing over six number ten feet and mashing thirty cents’ worth of imitation paradise plume, we lit in our seat with a metallic thump.

Right behind us were Sadie and Lizzie. You could tell that by the rhythmical chunk-chunk of the chewing gum. They kept in magnificent time with the automatic piano which did duty until the orchestra finished their evening’s repast over at Dugan’s food foundry.

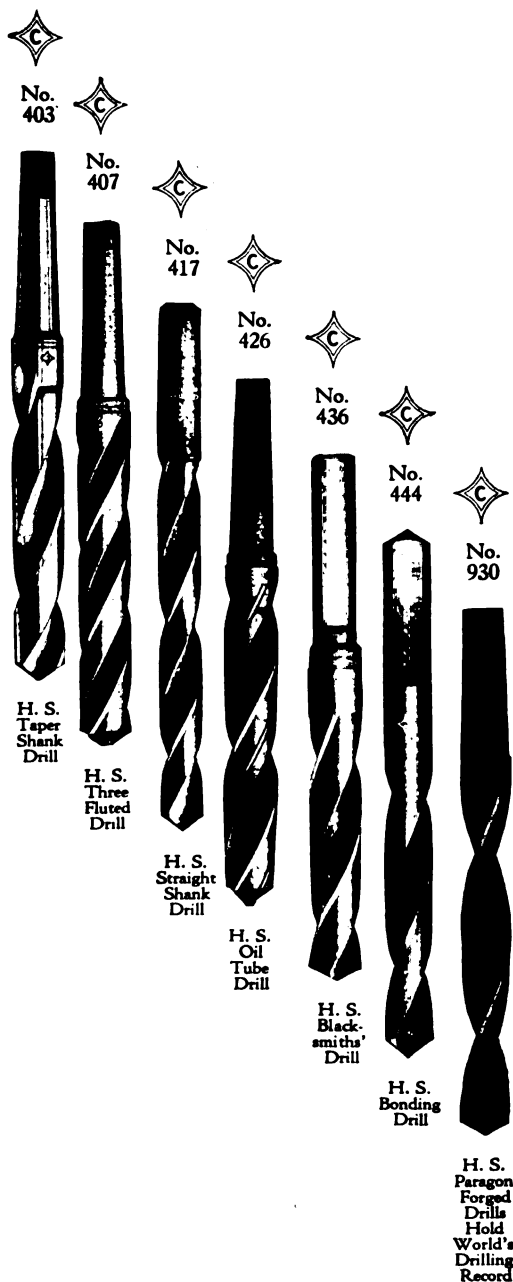
The show had just begun, and they were opening with a picture depicting the natives of Kitchie Kitchu—I think that was the name of the place—washing coffee preparatory to shipment. It was the best argument for Postum that I have ever seen. Through it all Sadie and Lizette prepared themselves for the headline attraction of the evening.

I gathered from their conversation that a female with a name like an anesthetic was

scheduled to show us "The Cost of Love." I'm married, so that I have cause to know that it is an expensive luxury; but I judged from what Sadie had to say — she "had seen it twict already," she said — that the star of the film version had paid an exceedingly high ante. Moreover, this damsel with the sneezy name was reputed to be quite an actress. Lizette said that while she did dearly *love* Theda, she had a feeling that she would like this lassie even better.

Now that sounded mighty interesting, 'cause I've seen Theda once or twice, and if this girl were to be better than Theda, I figured that this was no nice locality for a minister's son. But I had paid my hard-earned shekels, so what could I do but stick it out?

Having thus cleared myself of all moral responsibility for what follows, we will proceed apace. The coffee-washing episode being finished, the orchestra oozed out from under the stage, led by a shiny-haired bacchante with polished finger nails. After some preliminary threats it came to life with a wee tunelette that sounded reminiscent of a Turkish harem with splashing fountains and other cigarette-box scenery. Then "The Cost of Love" began to unreel itself.





Right away you could tell that the star must have paid a truly exorbitant price for her package of Cupid's commodity — anyone with half an eye could see that she had had only about a shilling

left with which to purchase clothing. In fact, the diluted cobweb which she appeared to think was a dress made Annette Kellerman and Susanna Cocroft look like Dutch market women. I remembered that she was supposed to be "even better than Theda" and while I've seen quite a lot of this Theda person, I'll hazard the remark that she overdresses in comparison with this Russian gazelle.

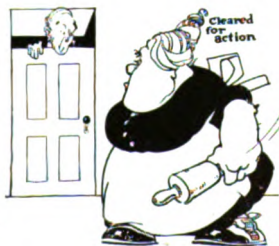
Every little while Sadie and Lizette would exhale a sigh that sounded like the 4:15 coming to a stop at Buckwheat Corners. In fact, I guess most of us were holding our breath throughout the majority of the performance. Now and then you'd see people sneaking hasty and guarded glances around the house to see if any of their relatives were there to catch 'em at it — just like a married man does when he goes to a burlesque show.

And the plot — ah! that was remarkable for preservation in spite of advanced age. It appeared that the heroine had used very bad judgment in selecting her spouse, and had picked a quince with nothing but a stack of years and yellow-backs to recommend him. He tottered so that I don't see how they ever got

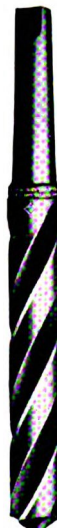
him down a church aisle. Naturally his better half longed for a real swell tea dansante or a nice boisterous pinochle party to relieve the monotony. She was in an awful fix, until one day, while she was weeping out of the window onto the geraniums, along comes Mister Alphonso Dillpickle Jones. He looked like a fellow who would cheat at croquet. But he was young, handsome and destitute — and cast for the hero — so there was nothing left for her to do but take him and be thankful he was n't any worse. She heaved a couple of forty-two centimeter sighs out of the window at him, but had bad luck and missed. (Of course it would n't be good form for him to fall in love with her right off the bat — that would cut the show too short. So, to while away the hours until train time, he kindly condescended to go sweet on a Spanish peanut of local repute.)

Miss Whatshername is peeved and puffed to a high degree of pifflication, and decides to get him or bust a suspender in the effort. This resolution created great excitement as she confided it to us in six-inch letters, for if she busted that suspender — Santa Banana! they'd have pinched the house as sure as I'm sitting here.

After losing a lot of sleep over it she prepares for action. Funny way she had of going about it, too — unlike the knights of old, who used to gird themselves for battle by taking on board a ton or two of Bethlehem's finest, this damsel prepared for battle by



No. 407



H. S.
Three
Fluted
Drill



No. 417



H. S.
Straight
Shank
Drill



No. 426



H. S.
Oil
Tube
Drill



No. 436



H. S.
Blacksmiths'
Drill



No. 444



H. S.
Bonding
Drill



No. 930



H. S.
Paragon
Forged
Drills
Hold
World's
Drilling
Record

taking on nothing, *absolutely nothing*. Like the modern battleship, she dispensed with all superfluous materials and *cleared* for action.

But Alphonso, he of the crinkled locks and bashful chin, managed to fend off her fond advances for the space of two whole reels. How he did it I don't pretend to know, being as I am only human — but at last he had to succumb to her charms, which he did in best Robert W. Chambers fashion.

It would be totally unnecessary to sketch out the entire plot — none of us are so all-fired unimaginative that we cannot conjure up the result of mixing a Russian actress with a French plot for two hours over a slow but warm fire. Oh, to be sure, dear, the censors had duly passed this film — they told us they had done so before the agony commenced, presuming, I suppose, that this would quiet and appease those of Puritan ancestry. The psychology of the proclamation concerning the sanitary nature of films passed by them always reminds me of Abdul Hamid's calling it a "holy war" when he thinks the Armenians are getting too prolific — it excuses all atrocities that may follow.

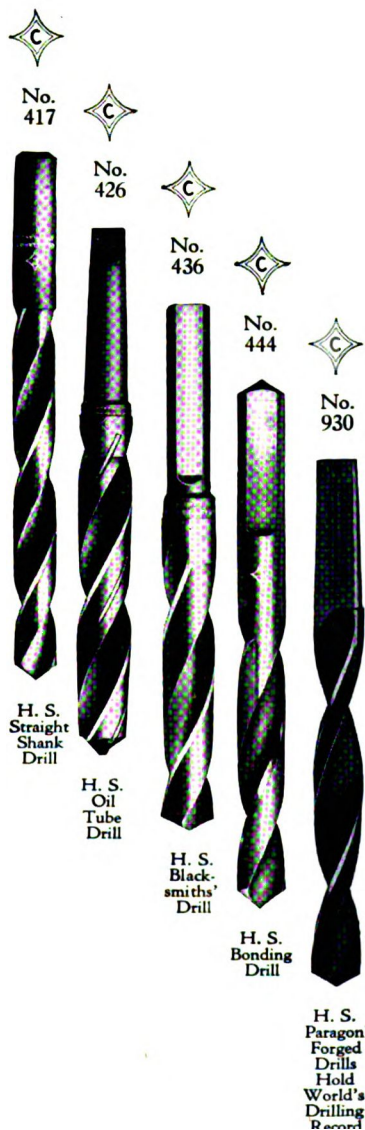
While censors cut out all scenes that might offend too grossly, they leave just enough of the sullied context to remove all doubt concerning the happenings during the amputated interim. It's no fault of theirs — the clipper is yet to be built that will amputate the *imagination*. As the scenes flit by, foot by foot and yard by yard, this department of your mental machinery gets into a groove — the trifling fact that there is a hiatus in the picture doesn't bother it at all. It takes up the normal course of the story where the censors cut it off, and refuses to forget all that must have transpired during

the deleted portion of the drama. It is n't what the people *see* that makes them rustle in embarrassment when the lights go up — it's what they *imagine*.

Well, be that as it may, it won't buy any gasoline, so let's get back to the story again. We need not rehearse all the details — suffice it to say that the management found it advisable to pass out ice water at intervals during the performance to keep the people cool. But after the heroine had disposed of herself in approved Japanese fashion, and after her antiquated hubby had lingered under the surface of the canal for too long a period, and after the Romeo of the skit had moved on to the next stop — then we selected a real nice quiet-looking side door, where we planned to make our exit without attracting attention to our downcast eyes.

Behind us were a man and his wife. He did n't say anything, and neither did she. In fact, no one said anything nor looked to right or left until we had cleared our skirts of the building. Then this particular man turned to his life partner and growled, "Say, Mother, I'm powerful glad we did n't bring the Kid along tonight. Ain't you?" Mother reckoned she was too.

But there were many kids there — Sadie and Lizzie were there, and at 10 p. m. they met their respective "steadies" outside under the glare of the arc light with their minds filled to overflowing with all sorts of venal rubbish. We are funny people — we let Sadie and Lizzie and all the others sop up eyefuls of tepid trash, and then, when it is too late, we try to legislate



Isn't It?



TIME is quality. takes time—unswerving exacts its pen

Of course penalty—we our deliveries

Yes, but worth far more

Isn't it a "Cleveland"? they're the increase your breakage in t

Isn't it?

CLEVELAND

NEW YORK

the penalty attached to caution and to
 to lower the gates at a railroad crossing
 and each precaution taken to insure the
 minima of "Cleveland" tools likewise
 by of time.

we cared to do so, we could escape this
 could relax our care and thereby speed up
 just a trifle—

aren't the results of this extra caution
 than the little additional time required?

comfortable feeling to know that your
 tools are capable of sustained effort—that
 and of tools that actually help you to
 production, unhampered by unexpected
 shop?

THE
AND TWIST DRILL COMPANY
CLEVELAND **CHICAGO**



No.
426



H. S.
Oil
Tube
Drill



No.
436



H. S.
Black-
smith's
Drill



No.
444



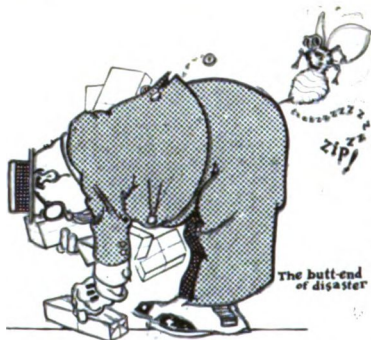
H. S.
Bonding
Drill



No.
930



H. S.
Paragon
Forged
Drills
Hold
World's
Drilling
Record



a code of spotless morals into them.

Which reminds me that something's been worrying me for these many months — can you tell me why it is that a girl will consider herself grossly insulted if you invite her to attend a burlesque show, but will accept your invitation to a voluptuous movie film with considerable eclat and gusto? Perhaps

it is because the burlesque shows are not done up in fancy packages and contain a little too much of the "rough stuff," whereas movies make frank iniquity a thing of beauty and a joy forever; they set it amongst flower gardens and palms, they throw about it an air of regal splendor that is most attractive to the steam-heated flat dweller, even though the characters do take poison in the last act to get rid of themselves. But even with this preference in their favor there are signs of sand in the movies' gear box.

We are about to part with some information. But before we take the plunge we want it distinctly understood that we receive no retainer from the movie men. No *sir*, we are upright, we are, and pass out all our advice and information gratuitously. Besides, The Cleveland Twist Drill Company are very charitably inclined, and slip us a sandwich now and then for telling folks about their drills. Of course, occasionally we get so interested in our subject that we forget to do our duty. But that doesn't matter, 'cause "Cleveland" drills keep right on drilling more holes per drill, whether we talk about it or not. We always feel that it is very inconsiderate of them to so belittle our importance, but you can't blame them, especially when you remember what a gauntlet of laboratories and testing rooms they have to run before they get to be a "Cleveland" drill. By the time they get the official O.K. it must be a real vacation for them to have nothing to do but drill holes in steel and iron. So

you need n't worry if I forget to remind you that "Cleveland" drills drill more holes per drill — they'll do it just the same as ever.

Let's see — what was I talking about when the telephone rang? Oh, yes, it was some advice, wasn't it? Well, we have a sizable hunch that the movie crowd are slowly killing the goose that is laying their golden egg. To all appearances they are engaged in a frenzied search after that hair-line that divides the decent from the indecent. At the present pace they will soon satiate the appetite of the spice-loving public and, in their haste to appease the crowd, will rush into the land of the lewd and obscene. At that moment the movies will skid into a shadowy spot, to become the trysting place of only such gentry as are in sad need of sandpaper collars.

Last year ninety-seven moving picture houses in New York City found it expedient to close their doors. Not all of them were large ones, 't is true, but among the missing are the Garrick and the Knickerbocker, the Hippodrome and Madison Square Garden. Why is it? Why is it that one of the large movie corporations has abandoned its Western studio and dismissed its corps of actors? And why do we hear rumors of mergers among the large producing companies?

Enterprises that have relied on the questionable for their incomes have generally met with the butt end of disaster sooner or later. Magazines have tried it, amusement parks have tried it; Rome and Athens tried it, and managed to establish quite odoriferous reputations; Egypt annexed eternal fame with her Cleopatras and lotus flowers. But now Rome is known principally for its spaghetti, Athens for its ruins, and Egypt has slithered away into an abode for mummies and other burned-out antiquities.

You can't beat the game. Anthony Comstock and the rest of us girls are here to see that you don't. We are engaged in uplifting the morals of the masses, and if you don't like it you can pass on to the next story, which has no morals.



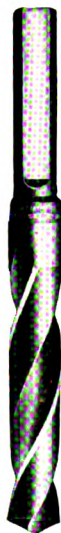
No.
436



No.
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No.
930



H. S.
Black-
smiths'
Drill

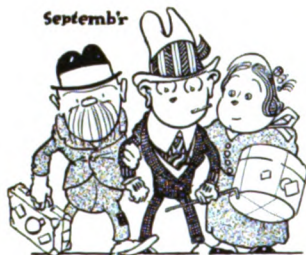


H. S.
Bonding
Drill



H. S.
Paragon
Forged
Drills
Hold
World's
Drilling
Record

ON SELECTING A COLLEGE



GOODNESS sakes alive! Will you look at the crowd coming out of the Trust Company! Must be a run on the bank or maybe one of the fall's crop of confidence men has hit town. But I don't believe it can be that — they don't usually show up until the crops are in. Funny the way everyone heads for the depot the minute they leave the bank, isn't it? There goes Willie Thompson with his grip!

Oh, now I know what's the trouble — *College opens this week*. That's it, all right. Look at Maw Thompson's faded taffeta dress, will you, and Paw's moss-green Sunday suit — vintage of 1898 as sure as you live. They've probably mortgaged half their life insurance and full claim to future leisure so's to ship their Joy and Pride up state for a slice of that commodity known as a "college education."

They're going to send him to Greensward. Personally I think they made a big mistake. Most people make a mistake when they set about selecting a college — they seem to think that a college is just a *college*. But it isn't. Colleges are as different as the dispositions of an army mule. That's what makes the subject so intricate. Colleges vary in size, in shape, and in advertising. Some are just plain everyday institutions that take most any overalled Hiram and work him over until he looks like one of Mrs. Astor's pet poodles; others refuse this raw material and specialize on blue-blooded and thoroughbred stock exclusively. Only those of recognized standing ever get a look at their reception rooms. If you want to qualify for them, you must have a family tree, a Rolls-Royce, and a chunk of the "Mayflower" in your hip pocket; furthermore, a nice coat of arms, not less than thirteen golf sticks, and a reputation — that you want to keep up or live down — will all help.

But no matter which of these two types you may select for *your* William, it's sure to fall within one of three subdivisions — either it's a solo college, a duet college, or one of those 1916 colleges where they pull the tremolo stop out and nail it down.

Let's take the solo type of college first—'cause that's a comparatively simple affair. Invariably it is located near a large vacant spot on the map—having been established years ago by some misguided ecclesiast with more of an eye for Learning than for Real Estate. The founder always seemed to have believed firmly in the blessedness or singleness, and therefore limited his bequest to the education of but one of the sexes. This makes life a very tame affair—the only comma in the students' four-year sentence is the annual ball. For six months they prepare for this ball, and for six months they recover from the financial ruin that follows in its train. But it's a gay, wild life while it lasts—whole carloads of lingerie are imported from civilization for the occasion. With this galaxy of youth they decorate the silent places, and for one week the campus rings with the blithesome laughter of the sweet young things. Then on Sunday night they all board the 5:15 and things settle back into a silence that outsilences the tomb. Owing to its isolation, this type of college is a great favorite among folks having sons they wish some girlie to forget. They call sonny to them, give him a ticket on the Beanville Special, and wreck him at one of these ingrowing towns where they have a college and but one train a day and that stops only on Christmas and the Fourth of July.



We never could work up much enthusiasm over these solo colleges. To our notion the duet type is something of an improvement. In these, budding womanhood and bluffing manhood meet and converse as part of the day's deadly routine. Some people call them "coeducational colleges." They have their advantages, but are unfortunate in many respects. For example—they permit the boys to observe the girls closely in the classroom at the early hour of eight in the morning, before the powder has had time to set. The new-blown rose effect and the other mural decorations of last evening's toilette give way to a horrible and inexplicable pallor; the illusion is destroyed, and womanhood loses all its charm.

Graduates of this type of institution marry late if ever—and all because the dear boys and dearer girls see too much of each other too early in the morning. Romance, love, and all that sort of thing, thrive on moonlight and



No.
444



H. S.
Bonding
Drill



No.
930



H. S.
Paragon
Forged
Drills
Hold
World's
Drilling
Record

sole
college



a judiciously limited propinquity, and even one of Howard Chandler Christy's ravishing brunettes would look like Sis Hopkins' double in the pale, cruel glow of an eight o'clock classroom. This being the case, we feel that the duet college can hardly withstand the acid test, and we turn to the last design where the *vox humana* and tremolo stuff reign supreme.

Here they combine the lingerie and the trouser departments at only rare and most delicious intervals.

On such blissful occasions, the dear children see just enough of each other to make it mutually interesting, without wearing at the sleeves. The girls' dormitory and the boys' dormitory are invariably located about three miles apart—the theory being, I presume, that if a fellow will wade through three miles of snow to see Her, he is bound to make the most of the opportunity. The hypothesis is undeniably correct, for statistics prove that graduates of this type of college marry very young. During the last half of the senior year they generally get an option on each other, and on Sundays they read the marriage service when they ought to be heeding the sermon. She wears his frat pin about her neck on a string, and he wears hers next to his heart, but under his shirt where no prying eye can rip the secret loose. On parting they swear eternal and undying love—then she goes back home and marries some guy with a drug store and a nice corner lot, while he marries some job and uses her photograph for shaving paper.

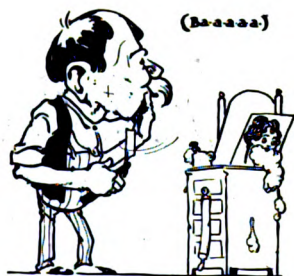
Of the three types of education foundries this last is most deserving of immortality—it takes more nerve to call on a girl at one of those Female Cemeteries than to ask the boss for a raise in pay; and more sagacity is involved in boosting your Affinity through a dormitory window after hours than in planning a sales campaign of national scope. Hence this type of college develops force, initiative, and fearlessness in the Youth.

Therefore, if you have any extra treasury certificates lingering about you, I beseech that you deposit them at the door and do your utmost to preserve to mankind this ultimate type of education, where hope



springs eternal in the human breast and where you never have to wait until the next mail to see if She still lives.

With this brief but authoritative introduction to the subject of colleges, we must close. Those desiring to establish themselves as patrons of art, science and football may from the above pick the most likely prospects for their beneficence. Ma and Pa may now sit tight to the old homestead and, without trouble or expense, aim their offspring at the particular educational bull's-eye which promises best for his individual makeup. In short, once again we have turned the floodlight into the byways of ignorance, and can pull the covers over our head this evening with a soothing sense of having accomplished a noble deed and led many a young man into the proper educational channels.



THINGS IT WERE WISE TO FORGET

From The New York Times

If you should see a tall fellow ahead of a crowd,
A leader of men, marching fearless and proud,
And you know of a tale whose mere telling aloud
Would cause his proud head to in anguish be bowed,
It's a pretty good plan to forget it.

If you know of a skeleton hidden away
In a closet, and guarded, and kept from the day
In the dark, and whose showing, whose sudden display
Would cause grief and sorrow and lifelong dismay,
It's a pretty good plan to forget it.

If you know of a thing that will darken the joy
Of a man or a woman, a girl or a boy,
That will wipe out a smile, or the least way annoy
A fellow, or cause any gladness to cloy,
It's a pretty good plan to forget it.



No.
930



H. S.
'Paragon'
Forged
Drills
Hold
World's
Drilling
Record

DRILL CHIPS' TABLE of CUTTING SPEEDS

PART II

Feet Per Minute		30'	40'	50'	60'	70'	80'	90'	100'
SIZE		REVOLUTIONS PER MINUTE							
Number	Decimal								
39	.0995	1152	1536	1920	2303	2687	3071	3455	3839
40	.0980	1169	1559	1949	2339	2729	3118	3508	3898
41	.0960	1194	1592	1990	2387	2785	3183	3581	3979
42	.0935	1226	1634	2043	2451	2860	3268	3677	4085
43	.0890	1288	1717	2146	2575	3004	3434	3863	4292
44	.0860	1333	1777	2221	2665	3109	3554	3999	4442
45	.0820	1397	1863	2329	2795	3261	3726	4192	4658
46	.0810	1415	1886	2358	2830	3301	3773	4244	4716
47	.0785	1460	1946	2433	2920	3406	3893	4379	4866
48	.0760	1508	2010	2513	3016	3518	4021	4523	5026
49	.0730	1570	2093	2617	3140	3663	4186	4710	5233
50	.0700	1637	2183	2729	3274	3820	4366	4911	5457
51	.0670	1710	2280	2851	3421	3991	4561	5131	5701
52	.0635	1805	2406	3008	3609	4211	4812	5414	6015
53	.0595	1924	2566	3207	3848	4490	5131	5773	6414
54	.0550	2084	2778	3473	4167	4862	5556	6251	6945
55	.0520	2204	2938	3673	4408	5142	5877	6611	7346
56	.0465	2465	3286	4108	4929	5751	6572	7394	8215
57	.0430	2671	3561	4452	5342	6232	7122	8013	8903
58	.0420	2729	3637	4547	5456	6367	7275	8186	9095
59	.0410	2795	3726	4658	5590	6521	7453	8388	9316
60	.0400	2865	3820	4775	5729	6684	7639	8594	9549
61	.0390	2938	3918	4897	5876	6856	7835	8815	9794
62	.0380	3015	4020	5025	6030	7035	8040	9045	10050
63	.0370	3096	4128	5160	6192	7224	8256	9288	10320
64	.0360	3183	4244	5305	6366	7427	8488	9549	10610
65	.0350	3273	4364	5455	6546	7637	8728	9819	10910
66	.0330	3474	4632	5790	6948	8106	9264	10422	11580
67	.0320	3582	4776	5970	7164	8358	9552	10746	11940
68	.0310	3696	4928	6160	7392	8624	9856	11088	12320
69	.0292	3918	5224	6530	7836	9142	10488	11754	13060
70	.0280	4091	5456	6820	8184	9548	10912	12276	13640
71	.0260	4419	5892	7365	8838	10311	11784	13257	14730
72	.0250	4584	6112	7640	9168	10696	12224	13752	15280

Additional copies of this chart on request. Ask for "D. C. Chart No. 3." (To be continued.)

Keep This to Yourself



OF COURSE you may keep this to yourself if you wish, but why not *pass it along to the Man in the Shop?* There's a feeble chance that he might enjoy it and he's *sure* to need the chart on the opposite page.

THE
CLEVELAND  TWIST DRILL
COMPANY

NEW YORK

CLEVELAND

CHICAGO



PUBLIC LIBRARY
ASTOR LENOX
TILDEN FOUNDATION

Tech.

10

10

DRILL CHIPS

THE NEW YORK
PUBLIC LIBRARY
ASTOR, LENOX
AND TILDEN FOUNDATION



OCTOBER

(Cleveland)
VFA



“**W**HETHER the common judgment shall exhibit that intelligence and self-restraint which have given to our system of government so large a degree of success, will depend on your attitude and on that of the young men of the country who will determine the measure of capacity for self-government and progress in coming years.” — *Charles E. Hughes.*



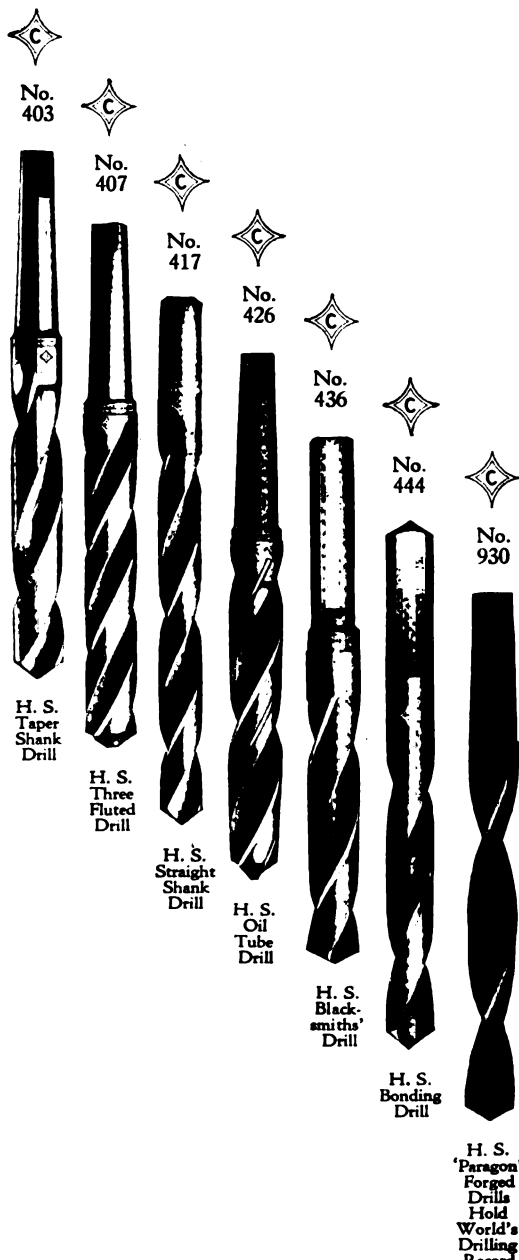
C. H. Handerson, Editor

CONCERNING CONVENTIONS



YES, thank you, we are feeling surpassingly rotten this bright morning—just returned from one of those spiritual eruptions commonly referred to as a "convention." Was it successful? It certainly was — don't I look it?

It's a funny thing about conventions — since time immemorial mankind has been attending conventions and yet both mankind and conventions continue to survive. It is wholly inexplicable. Early in our youth we succumb to a wild craving for knowledge, which we are led to believe nothing but a particular convention can satisfy. So we attend that convention. We linger thereabouts for a period of time depending upon our physical endurance, and return home disillusioned and imbued with a passionate desire to eschew all things conventional for ever and ever thereafter.



Drill Chips

Quite often we stick to this resolve for as long as a year — or until the next convention heaves its head over the horizon — whereupon we are again seized with that convention hunger, and we repeat the previous performance with only minor variations. Conventions have become a habit with most of us — like corset stays, teething rings and vice-presidents, they are a relic of a delicious past to which we cling in fond remembrance.

Publicly we all detest conventions, but privately we have much sympathy for them. As a result someone is always perpetrating a convention. Prospectus after prospectus arrives — each with its insidious story. For a time we switch them to the wastebasket unopened, with a wholesome feeling of righteousness in the act. But at last the convention microbe gets into our feverish blood and we steal a guilty glance into one of these seductive folders which extols the benefits to be derived from the forthcoming conclave.

"*Alea jacta est*" — same being highbrow for "the die is cast." We read that it will be a "mental stimulus," a "business banquet," a "feast of facts," a "foregathering of brains" and a "galaxy of glory." It's the same old story — we have read it and heard it one thousand times one thousand, and yet we are hooked. That "mental stimulus" stuff did the work — we

Drill Chips

need a "mental stimulus," yes our business needs a "mental stimulus." There will be bunches of big men hanging low where we can reach them at this convention. "Big, business building thoughts" will be running around loose like dust on a windy day. Furthermore we are in dire need of "renewed energy," "refreshed viewpoint," we need to be "revitalized" and "renovated mentally." We need to "get away from our work" and "get perspective" on our business. (For further reasons why we must attend this convention see most any page in the Ginger Junk Book.) And therefore, to make a long story short, we attend the convention.

Webster, in his well-known little novelette, calls a convention "an assemblage meeting for a common purpose." Evidently Brother Noah had attended a convention or two and knew whereof he spake, for the most common of all purposes is to get something for nothing. That is why we go to conventions—and then we don't get it. We slip away ostensibly to learn of the new things in the trade and (confidentially) to slip a wee bit of vacation past the eagle eye of a grasp-



No.
403



H. S.
Taper
Shank
Drill



No.
407



H. S.
Three
Fluted
Drill



No.
417



H. S.
Straight
Shank
Drill



No.
426



H. S.
Oil
Tube
Drill



No.
436



H. S.
Blacksmith's
Drill



No.
444



H. S.
Bonding
Drill



No.
930



H. S.
'Paragon'
Forged
Drills
Hold
World's
Drilling
Record

Drill Chips



ing firm. But we don't get the vacation, and all those new things are befogged by a pack of propaganda pushers who are there to sell us something which we don't want. And then they don't sell it. The day after a convention is a mutual disappointment to all concerned.

Let it be known that we are disposing of no second-hand information here — one fleeting look at us will tell more plainly than words that we have just returned from one of these legalized joy rides. Like all its forerunners this particular convention was bill-boarded as a regular gold mine of ideas and a sure-enough touchstone to eternal fortune. It was all of that and a little bit more — for the hotels. Hotels seem to be the only people able to take something away from a convention which they do not bring to it. Judging from my own personal experiences with hotels at convention time, this is not to be wondered at. For instance: On arrival at the forementioned convention, I made my way to a hotel which had been selected by our committee as an honest and upright emporium. They greeted me like a long lost brother, and as a token of esteem presented me with a sky-lighted hall bedroom that was undoubtedly a linen closet in less prosperous times. It cost five dollars per diem whether you slept in it or not. As an extra special

Drill Chips

inducement, I also had an interest in a bathtub next door. This proved very attractive until I discovered that the balance of the floor held a like interest. One chap in particular displayed a fondness for that tub which amounted to a real affinity. If cleanliness is really next to godliness, as they say, this man had a through ticket for the Pearly Gates — he slept in that tub because it was much more comfortable and convenient than his bed. I tried his bed and hereby absolve him from all blame. He was right and his little eccentricity is fully excusable.

Conventions are like rubber plants — you can't kill them, and the farther away you are from them the better they look. A convention in your own home town never amounts to very much. But if the same assemblage were to convene in Venice or Paris, it would, undoubtedly, be the "biggest thing of its kind ever held in the history of the organization."

For that reason this convention, from which I am now recovering, was a real world-beater — I had to travel 458 miles to get there. Along with some 5000 other deluded victims I made the trip filled with enthusiasm and hope. The lid was removed with much pomp and ceremony on a Monday morning by our beloved president, who undressed himself for 68 minutes upon the good which we were about to receive. The outlook, as he pictured it, was brilliant



Drill Chips



in the extreme and we all with one accord yanked out reams of paper and nice new pencils that we might the more readily dash off notes upon the scintillating ideas soon to be cast among us. I still have that pencil and the point is still as innocent of use as the day it left the factory. Each morning I took it out and held it poised and waiting for the lightning to strike. Each evening I sheathed it in its scabbard unsullied by exercise of any kind.

For four long, hot days we of the Faithful stuck it out. Our attending numbers shrank visibly hour by hour, until on the fourth and final day only a few disheartened wrecks remained. These had undoubtedly stuck in their seats since the previous day rather than return to the hotel. Only the speakers' platform retained its customary vigor of lung and limb. From morning till night throughout the entire siege it was adorned with an untiring array of horn tooters whose favorite song seemed to be "I'm the Guy." After looking back over long years of convention oratory we are led to believe that this ditty may safely be termed the national convention anthem.

Furthermore we have come to the unalterable conclusion that a convention can be a profitable investment for only three kinds of business — the band business, the bunting business, and the bunk business. Some there are to be sure who would add another "B" to the list, but since a bottle has not touched our lips since our bawling babyhood, we cannot speak authoritatively on this point.

It is possible (though we regard it as hardly probable) that someday there will be a convention at which we will do something besides march ourselves lame, talk ourselves hoarse and decide upon the date and place of the next eruption. But when that convention arrives we'll be garbed in little white kimonos and the Angel Gabriel will call us to order, for surely then the millennium will be here.

CONFIDENTIALLY SPEAKING

FAR be it from Ye Ed Eater to try and run any business but his own. Man alive! What with appendicitis and getting married and all, he's got troubles enough, but if you won't take a fence he'll tip you off to something, while the Boss is out to lunch.

If you don't use locomotive reamers, slip over to the next article before it's too late. The next article is a good one—we wrote it all ourselves. But if you *do* use locomotive reamers, we'll be able to save you a nickel or two maybe.

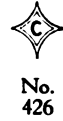
It may be that you have been ordering these reamers with the collars on the shanks a bit larger than regular. Are we right? Just so. Well then—that extra-size collar requires more additional labor than you may imagine, and as a result costs considerably more than the standard collar. Now listen, this is all on the quiet and if you talk in your sleep please don't mention my name, but the fact is that the "Cleveland" standard collar will do all that the



No. 417



H. S. Straight Shank Drill



No. 426



H. S. Oil Tube Drill



No. 436



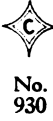
H. S. Blacksmith's Drill



No. 444



H. S. Bonding Drill



No. 930



H. S. 'Paragon' Forged Drills Hold World's Drilling Record

The Men-in-



AS you look
struggle
and puny. It
matter how

We took
Street. From
puny, our fight
a listless, res

Yet these
sometimes so
and that in
drills are be
than ever be

But we are
service becom
the immensi



CLEVELAND

NEW YORK

he-Street

own from a high office building, the
of the Men-in-the-Street seem trifling
the distance dims their efforts—no
successful they may be.

Manufacturers are like those Men-in-the-
far off our efforts must often appear
against the tidal wave of demand but
less struggle.

ae efforts—pigmy though they may
from a distance—are bearing fruit,
ndance—today more "Cleveland"
shipped to "Cleveland" Customers
e in our history.

ot content—nor will we be until our
all that you could ask—regardless of
f your demand for "Cleveland" drills.

THE
WIST DRILL COMPANY
CLEVELAND **CHICAGO**



No.
426



No.
436



No.
444



No.
936



H. S.
Oil
Tube
Drill



H. S.
Black-
smith's
Drill



H. S.
Bonding
Drill



H. S.
Parago
Forge
Drills
Hold
World
Drillin

Drill Chips

it costs
nothing
extra



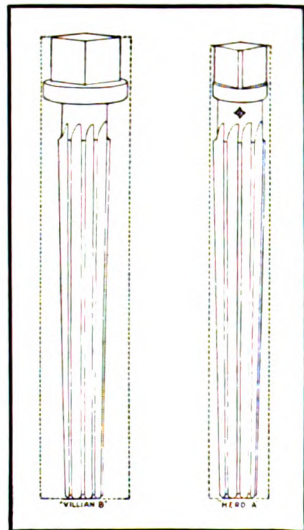
extra-size collar could do and, better yet, it costs nothing extra.

When we Desperate Desmond Drill Manufacturers get an order for a locomotive reamer with an extra-large prize-fighter's collar we have to go down into the basement and get a chunk of steel from the custodian of the stock large enough in diameter for the extra-size collar. Then we have to cut the steel

down to the size of the *flutes*, leaving only this extra-size collar the original bar size. Of course all that extra steel costs money, not to mention the time required to cut it down.

The attached sketches (made by a famous artist at great expense to the management) give the idea. Note ye that in both reamers the flutes are the same diameter, but the dotted lines show—not the course of the murderer—but the original size of the steel bar required to make each reamer. Reamer "A" has our standard non-slip collar, while reamer "B" has the extra-size collar. In "B" note the enormous percentage of waste unavoidable in cutting down the bar from the collar-size to flute-size.

Now then—here's where the real inside dope appears—the purpose in life of a collar on a locomotive reamer is to prevent the wrench from slipping off and mussing up the landscape. The regular standard collar on "Cleveland" locomotive reamers will prevent this mutilation of the landscape quite as well as any special and hence expensive extra-size collar. We've tried 'em all and we think we have it straight. A





"Cleveland" locomotive reamer collar is a good, generous, comfortable collar that fits to perfection, and is non-skid and anti-slip. We honestly think that you will like it, and we know that the men will like it just as well as any extra-expensive, extra-size collar and—but here comes the Boss—so we'll have to leave you to dig out the deeply buried moral all by yourself.

A DISSERTATION CONCERNING PLATFORMS AND HYPHENS

IT IS a source of constant wonder to me the way the political platform industry resists the influence of modern factory methods. In spite of the onward march of progress in all other industries, the political platform is still turned out by the same old hand-methods as in the past—the aspiring candidate for civic or national honors comes home from the cheese factory and says to his wife, "Wife, I must build me a nice platform this evening before we go over to Jones'." And so he sits down, while wife is frescoing her face and, after much toil and sweat, presents the community with a brand new platform which is original in no way whatsoever. Three doors down the street another candidate for something is likewise engaged, and with equally original results. Within a mile's radius there are probably half a hundred would-be legislators all perspiring platforms, and all doing it by the same tedious hand-me-down process that their fathers' fathers used before them.

I have before me a mayoralty platform of the early nineties and some six or eight platitudinous efforts of the present day. Some of their authors are out for the Legislature, others—more ambitious—have Congress in their mind's eye, another thinks he would make a surpassingly fine Sheriff. Yet regardless of their differing dates and ambitions, they are all enough alike in tone and texture to be turned out by the same man and on the same press.



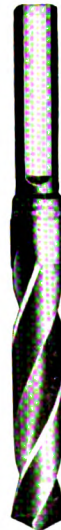
No. 436



No. 444



No. 930



H. S. Blacksmiths' Drill



H. S. Bonding Drill



H. S. 'Paragon' Forged Drills Hold World's Drilling R...



Considering the striking similarity of political platforms, why in the world does n't some individual with an eye for the almighty dollar produce a good, serviceable, all-around platform in vast quantities and retail it to the aspiring candidate at so much a thousand copies with his name filled in in big letters and red ink at the bottom? Think of the labor this method would save!!

"The Political Platform Syndicate, Unlimited" should be the next step forward in our political life. It is a logical business development and strictly modern. The possibilities for unifying and amalgamating the platform industry are simply immense. I myself would be open to a proposition to write a boilerplate platform for the new company. After giving the matter much thought, I believe that something like the following would meet with enthusiastic sale among aspirants for almost any political office: —

Dear Friend and Fellow Citizen :

I am a candidate for office at the earnest request of many lifelong friends who appreciate my unusual abilities.

I stand for justice and equity to all men — especially the laboring man, of whom I am proud to consider myself a part. I was born at an early age and have been a resident of this locality ever since. As I have never held any office, it is apparent that our governing bodies are in need of new blood. I am full of blood, which I am anxious to donate to my country — until after election.

I stand for an efficient administration of the people, for the people and buy the people. In many other ways I resemble Lincoln. I plan to surround myself with capable men who thoroughly understand the economical business methods of the present day. I will deliver F. O. B. the Capitol a businesslike administration.

Furthermore, having conducted a barber shop for fifteen years, I am familiar with the requirements of Big Business and will conserve the natural resources of the country. I intend to do a number of things and people, all of which I will be glad to explain the very minute I get firmly established in office.

On these patriotic principles I take my stand, and ask that you favor me with your vote at the polls on Tuesday next from 6 a. m. to 6 p. m. Thanking you for your consideration, I remain, your Friend and Fellow Citizen.

P. S.—I wear the American Flag wrapped about me day and night, and since childhood I have been able to sing "The Star Spangled Banner" and "My Country 'Tis of Thee" backwards without changing my glasses. I am 99 44/100 per cent pure American and I desire no "hyphenated" vote to assist me on my way.

(Signed) Oscar O'Shininskyavitch.

There's a paragraph that'll bring 'em to their feet with a vote in both hands. As you read it you feel the bounding patriotism of Mr. O'Shininskyavitch, who is 99 44/100 per cent pure American and *hates* hyphens. And because he hates 'em we are for him strong. We *all* hate 'em. They are a thorn in our flesh; they are popular with us like the polecat.

This unpopularity of the "hyphen" is wholly justifiable and right. But by "hyphen" we do *not* mean *all* foreigners. We mean only those men who would crucify and betray this their adopted country. Such are deserving of the law's full course and we have no sympathy for them. But it is not about *these* men that we worry — their numbers are too small to cause anxiety. It is the unwarranted prominence given them in the public print that brings the furrows to our brow. Our scandal-hungry press has magnified the importance of the few real offenders until they seem an army of dire dimensions. This country has talked "hyphens" and thought "hyphens" and dreamed "hyphens" until the word has lost its original meaning and is fast becoming distorted to include *all* foreigners — regardless of their birth, or parentage, or the honesty of their *Americanism*.

It is in this distortion of the true meaning of the word that the real danger lies, for if all aliens are to become "hyphens" and if all such "hyphens" are to be hated, what will become of our country's boasted brotherhood toward all comers? Yet this very train of thought is now being fostered by our press and by our own hysteria. It is time we discovered the tendency and either rectified it or buried the word itself beyond all recall.

We repeat — it is not those few "hyphens" that should worry us today, it is the yellow sheet which delights in expanding the meaning of the term to include all of foreign-sounding name —



No.
444



H. S.
Bonding
Drill



No.
930



H. S.
'Paragon'
Forged
Drills
Hold
World's
Drilling
Record

Drill Chips

regardless of their patriotism. Such publications are fostering a blaze of hatred against our immigrants of past and future years that can work us naught but evil. They are opening a crevice across the face of our country's flag. These fomenters of trouble—and they please to call themselves Americans—are nursing a whirlwind of disaster which needs only to be given full sway to open a chasm at our feet that will make the chasm of 1865 seem like a child's plaything.

If we are to hold our entity as a nation, we must likewise hold the devotion and fealty of our immigrants. We must make them one of us and not classify them as "hyphens"—unworthy of our hospitality and fit only for beyond the pale.

Therefore as we must of necessity speak of "hyphens" occasionally, let us use the word correctly. Let us keep it within its original and justifiable meaning—"men who would do harm to their adopted country." Make it a word of sheer contempt by all means, but as such use it with care and caution. And always let us remember that birth does not make or un-make an *American*. It is the honesty and sincerity of citizenship that measures patriotism in this country. There is no other standard.

And one thing more—there is also a tendency at the present moment to foist the "hyphen" upon us as something of a national issue. It is worthy of no such fame, and this is the worst of all times to befog the problems of the hour with any such political tomfoolery. Today as never since ante-bellum days must we see the real issues and see them clearly. To bring up bogus issues now is to throw dust in the face of the voter, and to bring up bogus issues fraught with dangerous possibilities is to play false with the American people. The "hyphen" is a bogus issue of the second class.

Why waste our time in idle frothing over "hyphens" when the real and only problem before us is the selection of a *Man*—a Man who shall be big enough and strong enough to guide us safely through the rapids, which the next four years are sure to bring. The platform and the party, the tariff and the trusts, the high cost of living and the "hyphen" are all subordinate to the *Man*. It is the Man we need, and if our so-called French-American, Austrian-American, Russian-American and German-American vote will elect such a Man, I say to you that these voters are better citizens—better *Americans*—by far than are those peanut politicians who would endanger the unity of their country for a mess of political pottage. What think you?

C · T · D · IMMORTALS



YOU KNOW him, Al. He's "H.P." alias "High Power" or the "Human Phlee." He spells it that way, 'cause he's from Philadelphia. Some runner is this man "H.P." It's lucky that we caught him before he took it into his head to run for President. If he ever did that, Woody and Charley would never have a chance. Twelve years ago he signed his first expense slip. 'Twas a critical moment, but he soon dispelled all doubt by hitting a stride that was the marvel of all beholders. It's because of this stride that he has become so adept at running down prospects. His mansion is

adorned with trophies of his prowess. In every field he shines, but it is on the diamond that he glows with particular brilliancy. The best play of his entire career took place almost one year ago today. The bases were full when our modest "Cleveland" violet stepped to bat. He had to make a hit—and he did. 'Twas a beautiful single. She called it a solitaire and scooped it up with her left hand. Since then H.P. has been driving in double harness. But he does n't mind it at all, for his specialty is teamwork. If you don't believe me, ask any of his customers. It is only recently that Harry has begun to live. He formerly passed a miserable existence in New Rochelle. But its precincts confined his expanding abilities, so in fairness to the world, we bid him pack the goldfish and take the 5:15 for Philly. This he did; and while he hasn't been there very long we have several substantial reasons for knowing that he is there—very much there. Gentlemen, permit me the honor and pleasure of introducing Mr. Harry P. Jenson—the "P" standing for "Peerless" or "Paragon" or "Perfect Double Tang." Take your choice—you can't go wrong when "H.P." is around.



No.
930



H. S.
"Paragon"
Forged
Drills
Hold
World's
Drilling

DRILL CHIPS' TABLE of CUTTING SPEEDS

PART III

Feet Per Minute		30'	40'	50'	60'	70'	80'	90'	100'
SIZE		REVOLUTIONS PER MINUTE							
Number	Decimal								
73	.0240	4776	6368	7960	9552	11144	12736	14328	15920
74	.0225	5106	6808	8510	10212	11914	13616	15318	17020
75	.0210	5457	7276	9095	10914	12733	14552	16371	18190
76	.0200	5730	7640	9550	11460	13370	15280	17190	19100
77	.0180	6366	8488	10610	12732	14854	16976	19098	21220
78	.0160	7161	9548	11935	14322	16709	19096	21483	23870
79	.0145	7902	10536	13170	15804	18438	21072	23706	26340
80	.0135	8490	11320	14150	16980	19810	22640	25470	28300
A	.2340	491	654	818	982	1145	1309	1472	1636
B	.2380	482	642	803	963	1124	1284	1445	1605
C	.2420	473	631	789	947	1105	1262	1420	1578
D	.2460	467	622	778	934	1089	1245	1400	1556
E	.2500	458	611	764	917	1070	1222	1375	1528
F	.2570	446	594	743	892	1040	1189	1337	1486
G	.2610	440	585	732	878	1024	1170	1317	1463
H	.2660	430	574	718	862	1005	1149	1292	1436
I	.2720	421	562	702	842	983	1123	1264	1404
J	.2770	414	552	690	827	965	1103	1241	1379
K	.2811	408	544	680	815	951	1087	1223	1359
L	.2900	395	527	659	790	922	1054	1185	1317
M	.2950	389	518	648	777	907	1036	1166	1295
N	.3020	380	506	633	759	886	1012	1139	1265
O	.3160	363	484	605	725	846	967	1088	1209
P	.3230	355	473	592	710	828	946	1065	1183
Q	.3320	345	460	575	690	805	920	1035	1150
R	.3390	338	451	564	676	789	902	1014	1127
S	.3480	329	439	549	659	769	878	988	1098
T	.3582	320	426	533	640	746	853	959	1066
U	.3680	311	415	519	623	727	830	934	1038
V	.3770	304	405	507	608	709	810	912	1013
W	.3860	297	396	495	594	693	792	891	989
X	.3970	289	385	481	576	672	769	865	962
Y	.4040	284	378	473	567	662	756	851	945
Z	.4130	277	370	462	555	647	740	832	925

Additional copies of this chart on request. Ask for "D. C. Chart No. 4."

Don't Be Tight!



IF we were all tight, think what a horrible world 'twould be. Loosen up just a little bit and

Pass This Issue Along to

The Man in The Shop

He won't blame you for wanting to get rid of it, and he'll be certain to need the chart shown on the opposite page. It will help him to get more holes per drill for you.

THE

CLEVELAND  TWIST DRILL
COMPANY

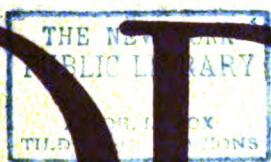
NEW YORK

CLEVELAND

CHICAGO



FOR NOVEMBER



DRILL CHIPS



NOVEMBER MORN

By MR. A. NONYMOUS

The hills lie naked in the breeze,
The fields unfrocked,
Bare are the limbs of all the trees,
No wonder the corn is shocked.

DRILL CHIPS

Published by THE CLEVELAND TWIST DRILL CO.
DRILL THREE NOVEMBER, 1916 CHIP ELEVEN

C. H. Handerson, Editor



HERE are a number of things requiring immediate attention this month. But space will permit mention of only the most flagrant offender against the human race — we refer to the critter who dispenses theater tickets at the boxoffice of the average show house.

Without becoming overly sanctimonious we might state that we are not of the sort to hold a grudge without cause. Yet we would embrace the opportunity to caress the features of one of these gentlemen with a two-foot section of lead pipe. The exercise would do our disposition an immense amount of good and would immeasurably soothe the passion that now rancors in our bosom. 'Tis a most unchristian thought, we'll admit, but to our notion the above party is one of those whose sudden and violent demise would do this world more good than harm.

Page One

Copyright, 1916, by The Cleveland Twist Drill Co.



No. 403



H. S. Taper Shank Drill



No. 407



H. S. Three Fluted Drill



No. 417



H. S. Straight Shank Drill



No. 426



H. S. Oil Tube Drill



No. 436



H. S. Blacksmith's Drill



No. 444



H. S. Bonding Drill



No. 930



H. S. 'Paragon' Forged Drill Hold World's Drilling



This murderous desire has not sprung into being fully armed, but is the gradual determination of a lifetime, suddenly focused and brought to a

head by an experience of last Thursday noon. For some time past we have been saving up our coppers with the avowed intent of blowing the family to a theater party. After much toil the stipulated amount accumulated, and we breezed into the theater lobby with the joy of accomplishment in our heart.

With true metropolitan sang-froid we leaned up to the ticket window and said: "Give us the best you've got in the house for tonight." The clothing store dummy back of the bars stared out at me as though I had asked him for the loan of a jitney till Monday. "Tonight?" says he, as if I must have made a mistake. "Tonight," says I, cautious like. He looked at me hard, and then reached up to a shelf near the ceiling. Meanwhile his face shone with that radiant enthusiasm that ennobles the countenance when pumping life into a porous automobile tire with a consumptive bicycle pump thirteen miles from a garage. After thumbing through a chunk of pasteboards, he drew two from the middle

and flipped them out at me as if they were hot and hurt his fingers.

"Where are these?" I asked. "Right here," says he, pointing to a topsy-turvy map of the house with all five fingers of his hand. "Oh, I see," says I, "but I only wanted *two* seats." "That's all I gave you," says he and reached for my money. "But what row are they in?" I persisted. "The second row from the back at the left," says he in tones that would freeze an acetylene torch. "Is that the best you have?" I asked. "It is," says he, giving me the up-and-down with a look that made me instinctively reach for my suspenders to see if they had parted company with my trousers. Then he fell to paring his nails with a nice little pearl-handled knife, while I staggered against the rail to postpone any immediate attempts at homicide. Anyway he seemed to consider that I had annoyed him enough and that the sale was complete.

As I hung pendent on the rail, a Broadway Wyandotte ricocheted into the lobby. She was dressed to a certain extent in gossamer clothing, and had a mural-landscape baby face. You would have thought that she had been raised in a convent if you didn't know better. She stepped up to



No. 403



H. S. Taper Shank Drill



No. 407



H. S. Three Fluted Drill



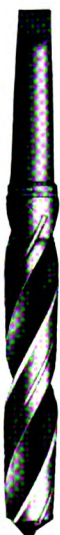
No. 417



H. S. Straight Shank Drill



No. 426



H. S. Oil Tube Drill



No. 436



H. S. Blacksmiths' Drill



No. 444



H. S. Bonding Drill



No. 930



H. S. Paragon Forged Drills Hold World's



the window and, in a voice that would shame milk and honey for limpid sweetness, requested our gentleman friend to give her the best in the house for that evening — something about the third row if he would be so kind. Gentleman friend nearly cut himself with his knife and stepped up on a stool so as to the better enjoy the scenery and the fragrance of blooming hyacinths. As he did so the damsel reached for expression No. 78, indicating demure-country-lass-alone-in-a-big-city-wid-no-mudder-to-guide-her, at the same time shifting her fur neck-scarf slightly so that it wouldn't obscure a good view of her southern exposure.

She had the combination all right. Gentleman behind window went through business of looking for a seat, and finally found one in a drawer containing a couple of dozen. "There you are, kiddo," says he to her, "right in the third row, center aisle. Nice, large afternoon, ain't it, cutie?" "Thank you, dearie," says she and bounced out without the flicker of an eyelash, and there I hung on the brass rail while the aforementioned gentleman leered out at me from behind his bars as if I were something the cat had dragged in.

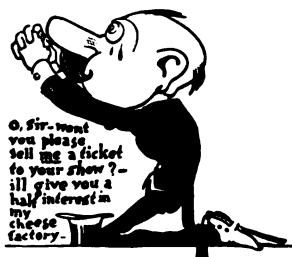
Do you blame me for harboring unlawful feelings against this arbiter of fashion? Yet he was no exception to the rule. For some

reason the chaps who take your money at a box-office consider themselves exempt from all the principles of salesmanship. Like street-car conductors and plumbers, they appear to do you a favor by admitting your existence and satisfying your wants — and in order that militant gentry may not forcibly adjust this warped perspective, they fortify themselves with bars and gratings which also serve to protect them from their just deserts.

Theaters universally reverse the machinery of selling. In their lobbies, the ticket buyer no longer *buys* tickets — he *sells himself* tickets while the boxoffice Adonis welcomes him with the glad hand of a morgue. If you ask a theater to hold a ticket three minutes past the hour of sale, though you sign affidavit to be there — they slap you on the cheek. If a department store or a corner grocery operated on the theater principle, it would last about as long as a tallow cat in a well advertised hot place. Some day, perhaps, some enlightened individual will arise and dispense theater tickets as if it didn't hurt to part with them.

When he arrives I'm going to go to his theater every week if I have to hock my pants to do it. He will deserve every ounce of patronage that the much abused public can give him.

Is n't it a fact ?



No.
407



H. S.
Three
Fluted
Drill



No.
417



H. S.
Straight
Shank
Drill



No.
426



H. S.
Oil
Tube
Drill



No.
436



H. S.
Blacksmiths'
Drill



No.
444



H. S.
Bonding
Drill



No.
930



H. S.
'Paragon'
Forged
Drills
Hold
World's

WHY YOU FIND THE NOTE ON THE ICE CHEST



LAST Saturday noon I went home for lunch, expecting to find wife putting on the war paint as a preface to our semiannual call upon some rich relatives. But wife wasn't there. As a substitute she had left a note pinned to the ice chest.

It read, "Dear Husband"—that being my name—"You will find the hash on the bottom shelf and, if you desire any dessert, you can fry yourself an egg. I have gone to a lecture on the Feminist Movement."

That, gentlemen, was her third offense. Twice previously have these Saturday noon Feminist Movements wreaked havoc with my luncheon. The possibilities are most alarming, and I am naturally a bit worried about this thing called the "Feminist Movement." Wife tells me that it is all my fault—or rather the fault of my sex—and there is no disputing her decision. Might makes right.

She has explained it all to me a number of times with true feminine patience, and for the illumination of my brethren, who may also be missing that Saturday noon home cooking, I shall set down as much of her explanation as I can remember:

It seems that this entire proposition, with all its awful possibilities for us menfolk, is but the logical result of giving women too much leisure time. Furthermore, it appears that this leisure time is a comparatively new commodity—in fact, it was non-

existent until *democracy* and *machinery* were introduced to the world. I'll have to confess that at first I, myself, didn't see what democracy and machinery had to do with the plot, but my better nine-tenths elucidates something like this:

In the olden days when we used to go around killing each other with lances and horses instead of laughing gas and automobiles, the fair sex exerted considerable political influence. While of course they had no legal standing in the courts and were supposed to be out of politics for life, none the less they were kept busy pulling political wires — which did the work just as well as though they had swung the battle-ax with the best of us menfolk.

Moreover, the countesses and abbesses and all the other "esses" had accumulated a fair share of land through the operation of violence and sudden death, and when occasion demanded they were fully capable of dictating to their tenants or to any others who might be a bit obstinate in their political views. If mere dictation wouldn't do the work, they had other means of gaining their ends. For instance, if someone became unduly obstreperous, a sword might be made to slip into his vitals—purely by accident—or some limpid poison might be directed down his throat, when he was n't looking that way. He usually took the hint and departed post haste. Or if some "higher up's" influence was desired, a dazzling countess with ruby lips and cow eyes could always be found to whisper sweet



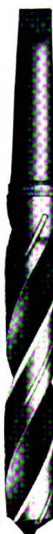
No.
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H. S.
Straight
Shank
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No.
426



H. S.
Oil
Tube
Drill



No.
436



H. S.
Black-
smiths'
Drill



No.
444



H. S.
Bonding
Drill



No.
930



H. S.
'Paragon'
Forged
Drills
Hold
World's

countess?

— sure,
look at
the jewelry
and
every-
thing



nothings in his ear and convert him to her way of thinking. So you see with all this wire-pulling and leg-stretching going on, women were kept mighty busy and had no time to dabble in the Feminist Movement.

But then along came democracy. When it skidded onto the stage, woman lost her grip on the wires; for with democracy in vogue there was no way of telling whether a fellow voted as he pledged his Ladie Love or not. He could swear by all the stars to vote for Dugan, and then the base varlet could slip behind the curtained booth and put in a plunker for Murphy. Said Ladie Love would never know of his duplicity. As a result, upon the entrance of democracy, woman soon realized that all her witching wiles were spent for naught. In despair she dropped the job of running the earth, and the burden was filched from the gutter by us power-hungry menfolk.

But even without politics-by-proxy, woman would have been fairly busy about her household affairs, with no time for the Feminist Movement, if it had not been for machinery, which entered the limelight at about this stage of the game. Machinery robbed woman of her last employment. It left her stranded high and dry on the banks of the river Idleness, with nothing to do or think about except this Feminist Movement. As history records why machinery forced idleness upon womankind, I shall be so bold as to quote a leaf or two from the Book of the Ages :

In the early days of which we speak, everything had to be done by hand—for there was no machinery. As God



Would You Scrap This Pencil?

TRUE, its point is broken,
but the remainder is as
good as ever —

Q If it were your pencil,
would you scrap it as worth-
less or would you spend a
moment or two in putting
a new poi ?

Why of course you would —

Well then — — — — —



No.
426



H. S.
Oil
Tube
Drill



No.
436



H. S.
Black-
smiths'
Drill



No.
444



H. S.
Bonding
Drill



No.
930



H. S.
'Paragon'
Forged
Drills
Hold
World's



gave each man but two hands, even the best of men—without help—found himself poorly prepared to fight the battle of life. Man needed help, and the best and surest way of getting help was to *marry* it. A stripling youth would reach maturity, and his dad would give him leave to set up in business for himself. So said stripling would buckle on a harp and set of

slushy verses, swiped from a current magazine, and a wooing go. As physical strength was a decided asset in any household, he generally picked on some lassie built more for cargo than speed. When he located the correct combination to her heart, he married her—thus making certain that she wouldn't join the I.W.W. or quit him to work some place where the ventilation was more perfect.

And the very minute the village pastor said, "I pronounce you man and wife," the gentleman in question as good as established a juicy line of credit, for a truly industrious wife in those days was a bankable asset. Within twenty-four hours any wife, who pretended to be worth her keep, would expect to turn out some three dozen wax dips, five or six padded bedspreads, 18 yards of good husky homespun, a set of passable furniture, if she were at all handy with the hammer, and a quartette of dead Indians if any happened around that way. In her spare time of course she could feed the cows and chickens, and do any of those familiar odd jobs such as the family sewing and darning. Then she'd have absolutely nothing to do until the next morning at four o'clock—provided only the wood were chopped for the coming winter. For her services her husband repaid her liberally. He gave her unstinted praise and the entire egg money from the seven anemic chickens.

One doesn't need a Burroughs adding machine to reckon why a wife of the olden days was regarded as a very profitable and necessary investment for any young man of ambition—or why

Why Not Do the Same With Your Broken-Tanged Drills?

YOU repoint your pencils — why not re-tang your drills? The reasoning is identical, and by doing so you save not only the drill in question but the purchase price of its duplicate — provided you have a

PERFECT DOUBLE-TANG SOCKET

Q There's no trick about it — merely grind a new tang below the broken one and slip it into a "Perfect Double-Tang." That done, the drill's all ready for action — and the tang's 25-60% *stronger than before*.

Q Simple, isn't it — yet no more so than "Perfect Double-Tang" — it's in one piece — inexpensive — absolutely fool-proof — and always ready to rescue a broken-tanged drill from your scrap heap.

Q Your present scrap heap would probably pay for a set of "Double-Tangs," so why not try one now and let it pay for itself out of the first day's saving? "Double-Tang Catalog 388" tells all about it. Yours is ready.



Ready for the Scrap



Ready for Business



Ready for "Perfect Double-Tang"



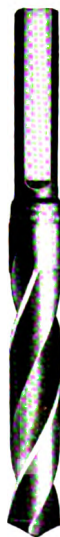
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No. 444



No. 930



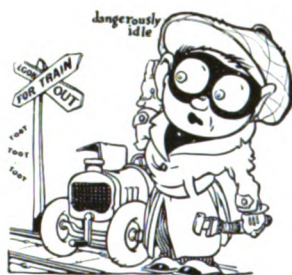
H. S. Blacksmiths' Drill



H. S. Bonding Drill



H. S. 'Paragon' Forged Drills Hold World's



women had no time to attend Feminist Movement luncheons on Saturday noons. In those rollicking days every home was its own self-constituted and self-contained factory, and the wife was general superintendent, office boy and hired help de luxe.

We have a survival of the same system today, and it illustrates most graphically the economic importance of woman under the old regime.

The next time you are out in Oklahoma you will run across a Navaho blanket or maybe two of them. Some of these are actually made by Navaho Indians—although I am told that by far the majority of them are the product of a loft over in Harlem. Be that as it may—if it is a genuine Navaho, it is probably the product of the workshop of Messrs. Sky Eye or Fat Pup. Sky Eye and Fat Pup are two Navaho braves of repute. The domestic activities of either of these gentlemen will show why woman of the last century had no time for Feministic frivolities. Take Sky Eye's domicile as a typical example—when his father threw him out of the parental wigwam, he had just enough of the world's goods to purchase a small squid of tobacco. But he was a wise one and, after fraternizing with a few tourists, managed to accumulate enough wampum to purchase a spavined cow. That cow put him on the highroad to fortune, for even a consumptive longhorn in Navaholand is tradeable for a fairly industrious wife. On acquiring the wife he set her to work making blankets. In due course of time enough blankets sprang from her loom to trade for another cow. After some dickering the second cow was traded for another industrious wife. Immediately the two wives, the old and the new, were set to work turning out more blankets—and so the process continued until either the supply of cows or wives gave out. I don't remember which it was. In any event Sky Eye, today, is the J. Pierpont of his community, for he was familiar with the method of accumulating wealth by accumulating wives.

Shocking as this system may seem to us of culture, it is but an exaggeration of the method of the forementioned olden days, and it well

illustrates the utter dependence of our fathers upon hand labor and hence upon wives. The two things were formerly synonymous. Without the helping hands of a wife, our medieval and colonial fathers had but a slim chance of acquiring fortune. Their system of wealth-gathering had its very foundation in the wife. Hence the economic importance of woman at that time is clearly shown.

But with the introduction of machinery the value of hand labor decreased tremendously, and with it the value of a wife. Instead of annexing a wife to do his weaving, a man could now purchase a machine which would knit enough woollens to supply not only himself but the remainder of the community to boot. The machine enabled him to pile up wealth far faster than any wife could ever do it for him. Step by step nine-tenths of the work formerly performed by the wife was undertaken by machines.

As wind of this innovation got abroad, the market value of wives dropped. They became not an asset but a liability. Marrying parsons, who had previously done a land office business, went into involuntary bankruptcy. Race suicide made its initial bow—now for the first time wives' and children's hands were not needed.

What few wives there were, no longer split the wood and knit the wool. It was all done for them by machines. The vacuum cleaner swept the floors and the washing machine massaged the underwear as well as the strongest of wives. By nine a. m. the wife of the new-fangled household found her work completed, and throughout the remainder of the day large gobs of time hung heavy on her hands. From the workshop of the world the home became but a loafing place for transients. Machinery did the dirty work, and in the doing robbed woman of her economic importance to menfolk and left her with nothing to do but *think*.

And so woman began to think. She looked down and back at her fallen estate. She saw her political influence foreshortened by the advent of democracy. She saw her economic importance vitiated by the invention of machinery. She saw herself gradually legislated and invented out of



No.
444



H. S.
Bonding
Drill



No.
930



H. S.
Paragon
Forged
Drills
Hold
World's

existence. To complain would have been useless, and so she sought a substitute for that which she had lost.

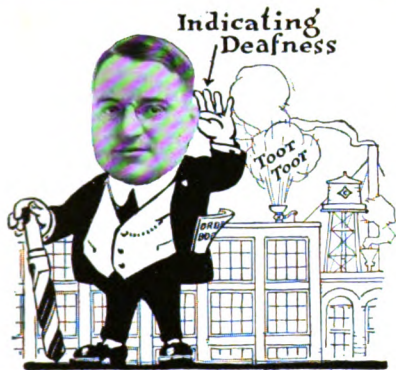
In one of those idle — dangerously idle — moments bequeathed her by machinery and democracy, she hit upon the Feminist Movement. Apparently it furnished an ideal vehicle for the re-establishment of her importance, a superb means of rehabilitating her fallen fortunes, and a desirable exhaust for her spare time. Therefore unto this Feminist Movement she clove — to the decided detriment of our Saturday noon luncheons.

Now mark you, gentlemen, this trouble has come upon us because we gave woman time to *think*, and if we persist in keeping her as idle as the painted ship of Fifth Reader fame, then of necessity she will continue to think and think and think — and goodness knows what all this extra thinking may produce. It may be something far worse than suffrage.

It is high time that we ourselves did some thinking and contrived a way out of our self-made dilemma. Many exits have been proposed, but the most practicable route so far suggested is to let woman have her own sweet way — let her have her suffrage. Once she gets it she will again be so busy that she will have no time to think. Then, praise Allah! our difficulties will be at an end. Yes, brethren, let us unite and forestall the possibilities of further injury to the supremacy of Man. Besides, after it is all settled and women have the vote, they will no longer attend Feminist Movement luncheons on Saturday noons, and we will no longer find a note pinned to the ice chest reading, "I have gone to the Feminist Movement. Your hash is on the bottom shelf."

NO, IT ISN'T THAT

EXPERTS agree that the moon and sun will rise and set in 1917 on about the same schedule they followed in 1916. Forearmed with this valuable and exclusive information we are preparing a calendar for the forthcoming year. While native modesty forbids any loud whoops of joy, we must candidly admit that our 1917 date tree will be quite the most luscious example of horticulture we have yet produced. We plan to plant it in your office about three jumps ahead of the Christmas bills. It will be called "The Critical Moment," but it is not a picture of a man balancing a scoopful of spaghetti on a fork. No, it is not.



C · T · D · IMMORTALS

HERB is one of the rare sort, who would hide his light under a bushel, if he could. But in our opinion a bushel is already light enough and therefore, in fairness to Herb, we take a fiendish joy in hauling him forth and displaying his effulgence to the passing throng. But before we reach for the well-earned bouquets, we must warn

you that Herb has a failing — a peculiar one for a salesman, too — he can hear an order eight blocks away, but he's as deaf as a post to the five o'clock whistle. Its music hath no charms for him. As a faithful and copious consumer of the midnight oil he is a man after John D's own heart.

But he thrives on it — bless you, yes. Of course the picture doesn't show it very well, but that's the photographer's fault. He pressed the button when Herb was thinking of the only two troubles he has in all the world—but as they are both little ones we will brush them aside and verbally remedy the photographer's failing.

In real life Herb is just about the sunniest spot in all Chicago. In and about the Windy City he is spoken of as "Sunny Jim"—which is odd because he never uses force. His success is based on the doctrine that the customer is generally right and so, whenever anyone suggests that he needs more holes per drill, Herb agrees without question and delivers the holes, if he has to bust a suspender to do it. His name is "White" and he's all that and more. His middle initial is "S" which must stand for sincere—for that's Herb. He is loyal to his house, his customers and his friends. That, I say, is the full measure of the modern salesman. Because of all these things and a few more like them, I take great pleasure in introducing Herbert S. White, now in his thirteenth year of conversion to the doctrine that "Cleveland" drills drill more holes per drill.



No.
930



H. S.
'Paragon'
Forged
Drills
Hold
World's



THE U. S. STANDARD SYSTEM OF BOLTS AND NUTS



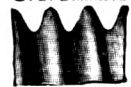
As recommended by the Franklin Institute, of Philadelphia
December 15, 1864

Diameter of Bolt Inches	No. of Threads per Inch	Diameter of Hole in Nut Inches	Short Diameter of Nut* Inches	Diameter of Bolt Inches	No. of Threads per Inch	Diameter of Hole in Nut Inches	Short Diameter of Nut* Inches
$\frac{1}{4}$	20	.185	$\frac{1}{2}$	2	$4\frac{1}{2}$	1.712	$3\frac{1}{8}$
$\frac{5}{16}$	18	.240	$\frac{3}{8}$	$2\frac{1}{4}$	$4\frac{1}{2}$	1.962	$3\frac{1}{2}$
$\frac{3}{8}$	16	.294	$\frac{1}{2}$	$2\frac{1}{2}$	4	2.175	$3\frac{7}{8}$
$\frac{7}{16}$	14	.344	$\frac{5}{8}$	$2\frac{3}{4}$	4	2.425	$4\frac{1}{4}$
$\frac{1}{2}$	13	.400	$\frac{3}{4}$	3	$3\frac{1}{2}$	2.628	$4\frac{5}{8}$
$\frac{5}{8}$	12	.454	$\frac{7}{8}$	$3\frac{1}{4}$	$3\frac{1}{2}$	2.878	5
$\frac{3}{4}$	11	.507	$1\frac{1}{8}$	$3\frac{1}{2}$	$3\frac{1}{4}$	3.100	$5\frac{3}{8}$
$\frac{7}{8}$	10	.620	$1\frac{1}{4}$	$3\frac{3}{4}$	3	3.317	$5\frac{3}{4}$
1	9	.731	$1\frac{5}{8}$	4	3	3.566	$6\frac{1}{8}$
$1\frac{1}{8}$	8	.837	$1\frac{3}{4}$	$4\frac{1}{4}$	$2\frac{7}{8}$	3.825	$6\frac{1}{2}$
$1\frac{1}{4}$	7	.940	$1\frac{7}{8}$	$4\frac{1}{2}$	$2\frac{3}{4}$	4.027	$6\frac{7}{8}$
$1\frac{3}{8}$	6	1.065	2	$4\frac{3}{4}$	$2\frac{5}{8}$	4.255	$7\frac{1}{4}$
$1\frac{1}{2}$	6	1.160	$2\frac{1}{8}$	5	$2\frac{1}{2}$	4.480	$7\frac{5}{8}$
$1\frac{5}{8}$	5	1.284	$2\frac{3}{8}$	$5\frac{1}{4}$	$2\frac{1}{2}$	4.730	8
$1\frac{3}{4}$	$5\frac{1}{2}$	1.389	$2\frac{1}{2}$	$5\frac{1}{2}$	$2\frac{3}{8}$	5.053	$8\frac{3}{8}$
$1\frac{7}{8}$	5	1.490	$2\frac{3}{4}$	$5\frac{3}{4}$	$2\frac{3}{8}$	5.203	$8\frac{3}{4}$
		1.615	$2\frac{1}{2}$	6	$2\frac{1}{4}$	5.423	$9\frac{1}{8}$

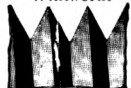
*Or size of wrench.



U. S. Standard



Whitworth



V-Thread

DRILL LIST FOR PIPE TAPS

Diameter of Tap or Size of Pipe Inches	Diameter of Drill Inches	Diameter of Tap or Size of Pipe Inches	Diameter of Drill Inches
$\frac{1}{8}$	$\frac{3}{16}$	$1\frac{1}{4}$	$1\frac{1}{2}$
$\frac{1}{4}$	$\frac{5}{16}$	$1\frac{1}{2}$	$1\frac{3}{4}$
$\frac{3}{8}$	$\frac{7}{16}$	2	$2\frac{1}{8}$
$\frac{1}{2}$	$\frac{9}{16}$	$2\frac{1}{2}$	$2\frac{1}{4}$
$\frac{3}{4}$	$\frac{11}{16}$	3	$3\frac{1}{8}$
1	$1\frac{1}{8}$	$3\frac{1}{2}$	$3\frac{1}{4}$

Your Wife Will Miss This



IF you don't bring this home to wife, she will miss it. But we'll tell you a way out — tell her that you thought it best to

Pass It Along to the
Man in the Shop —

She'll appreciate that he'll use the chart on the opposite page to get you **more** holes per drill and that'll mean more profits per hole and a **new** fall bonnet for wife. So make everybody happy and

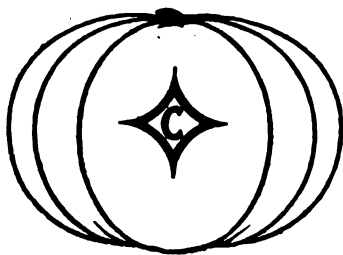
Pass Drill Chips Along
To the Man in the Shop

THE
CLEVELAND  **TWIST DRILL** 
COMPANY

NEW YORK

CLEVELAND

CHICAGO




12
DRILL



December
1916

CHIPS

We all join in wishing
you a Very Happy
Christmas and a 
Prosperous New Year

The
Cleveland  Twist Drill
Company


PRES.

DRILL CHIPS



Published by THE CLEVELAND TWIST DRILL CO.
DRILL THREE DECEMBER, 1916 CHIP TWELVE

C. H. Handerson, Editor



THIS season of the year, it is considered woefully inadequate to wish a man a mere "Merry Christmas"—in these ultra modern times, some new disguise or flavor must be added to the homespun holiday sentiments of the olden days, in order to bring them up to date and to give them a wholly unique and artificial "kick."

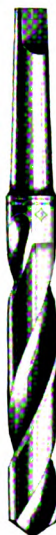
Our laborious efforts to outdo each other in the expensiveness of our Christmas gifts and the extravagance of our Christmas wishes invariably remind me of the be-whiskered story of the four sons of Saul, each of whom opened a clothing emporium on E. Federal Street in Youngstown, Ohio. The first arrival hung out a sign bearing the gaudy legend, "The Best Suits in the City." The second comer selected a store nearby and, not wishing to be outdone, lettered his shingle to read, "The Best Suits in the State." The third rented a

Page One

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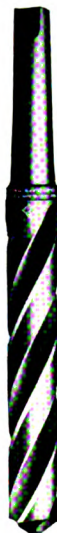
No. 403



H. S. Taper Shank Drill



No. 407



H. S. Three Fluted Drill



No. 417



H. S. Straight Shank Drill



No. 426



H. S. Oil Tube Drill



No. 436



H. S. Blacksmiths' Drill



No. 444



H. S. Bonding Drill



No. 93



H. S. Paraforge Drill Hole Work Drill



THIS SIDE OF THE STREET



room on the same side of the thoroughfare as the other two, and apparently capped the advertising climax by announcing, "The Best Suits in the World." And then the fourth merchant opened his store, only to find that his competitors, in their search after suitable superlatives with which to describe their wares, had already preempted about all the available territorial limits. He surveyed the situation and noted with dismay that within a single short block one could buy "The Best Suits in the City," "in the State," or "in the World." Mighty little space seemed to remain. But grim joy suffused his being as he noted that his store and the stores of his competitors were all situated on the selfsame side of the street. On making this apparently unimportant discovery, he smiled a shrewd smile, and for ever after contented himself with the seemingly simple slogan, "The Best Suits on this Side of the Street."

It is this same process of heaping superlative upon superlative that now engages all of us who desire to wish our friends a really modern "Merry Christmas." In the early days, just the simple "Merry Christmas" was deemed ample and sufficient.



But now we must open Webster at the back, drop another quarter in the gas meter, and hunt far into the night for some bejeweled phraseology for the thing—and all in order to prove to our friends that we are no common brokers of bromides, but real sure-enough coiners of cute chanteys, capable of gilding the sunset or enameling the lily, or of wishing a “Merry Christmas” in some clever, brand new, inspirational way.

Perhaps, here at the home of the hole doctrine, we are a bit old-fashioned. We continue to hold fast to the opinion that all the verbal fireworks in the world won’t add one whit to the old-time, homely goodness of the original phrase. And so instead of bedecking its ancient beauty in festoons and gaudy gingerbread we’ll just wish —

May You and Yours Enjoy
A Very Happy and Merry
Christmastide Together.



One of our good friends in Cincinnati, after reading our recent remarks concerning conventions, sends us the following anecdote—you can tell that Oscar and Adolph are somewhere in the vicinity: —

“Chure ting — I been twice already to Atlantic City to conventions. Each time I vas ten days trunk und ten days sick, unt *efen den* I didn’t sell nodings. Nobody would buy a nigel’s vorth — they came all dressed up to have a good time und live off of the manufacturers.”

No.
403



H. S.
Taper
Shank
Drill



No.
407



H. S.
Three
Fluted
Drill



No.
417



H. S.
Straight
Shank
Drill



No.
426



H. S.
Oil
Tube
Drill



No.
436



H. S.
Black-
smiths'
Drill



No.
444



H. S.
Bonding
Drill



No.
930



H. S.
Paragon'
Forged
Drills
Hold
World's



ISN'T IT A FACT?

I NOTE from the newspapers, who are all very faithful about reporting such matters, that a book agent recently committed suicide in a physician's office. The dispatch states that "His order book contained some very fine orders from some of the city's most eminent specialists and the coroner could, therefore, assign no cause for his rash act."

No cause indeed!! Why does a duck swim, a chicken cross a road, or an all-day-sucker last all day? It can't do otherwise. It is made that way. It is the only thing for it to do.

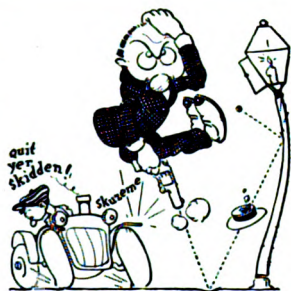
I can have nothing but wholesome respect for a man who selects a physician's office for the sudden termination of his earthly woes. Such a man shows a fine and delicate appreciation of the fitness of things, a code of ethics that is unimpeachable, an artistic sense of decency and decorum that is simply immense. The entire stage setting is ideally adapted to suicidal scenes. There is nothing to distract attention from the morbid impulse. Even the onlookers would be all sympathy, and only occasionally would some envious patient try to



wrest the gun from out your hand in order to use it on himself. But he would be the exception—not the rule—invariably they would admire your idea and its artistic execution.



On the other hand, in a theater lobby some dashing damsel might pass by and a glimpse of her might sidetrack one's intent, or on a public corner some malicious automobile might skid and spoil your aim. But in a doctor's office everything is soulfully and unanimously in harmony with the suicidal instinct. Sober thought must recommend the location as an ideal spot for any harrowing scene, and the more harrowing the better. From the moment you enter the room you are en tune to the idea—



The first creosoted breath that greets you is reminiscent of embalming, catacombs and other like ludicrous things. The damsel who takes down your name, telephone number, and other embarrassing inside information about your past and probable future, invariably looks as though she were just toying with the undertaker. If she is an orthodox doctor's assistant, she will wear a sad fixed smile, denoting that once she had a great inspiring joy, years and years ago, who married somebody else. Only the sad remembrance of his parting embrace seems to sustain her, and her physical appearance would lead one to believe that she lived on the stuff that the Hawaiians use for skirts and some folks like for breakfast food.

It's a ten to one bet that she's as thin as a bed slat, and wears those thick glasses that make



No.
407



H. S.
Three
Fluted
Drill



No.
417



H. S.
Straight
Shank
Drill



No.
426



H. S.
Oil
Tube
Drill



No.
436



H. S.
Blacksmiths'
Drill



No.
444



H. S.
Bonding
Drill



No.
930



H. S.
Paragon
Forged
Drills
Hold
World's



her eyes look like those appetizing sights we see in opticians' windows, bulging out from nice velvet settings. The minute you lay your eyes on one of these doctor's assistants, you remember all your relatives who ever died—it is a sign that you are in harmony with the place, and the girl, recognizing the symptoms, rolls funereally forth to greet you.

In a voice that sounds like an echo from the Great Beyond she asks you if you came to see the dear doctor. Don't be deceived—she is trying to make you believe that some folks come there to while away the idle hours or to cheer themselves sufficiently to attend the Follies of 1918. But don't bite—keep on looking bankrupt and your bill won't be as much as if you look cheerful. Tell her that you did come to see the doctor. At this confession she will ask you if you will have a chair. As there are seldom any straps to hang to, you might as well accept her invitation and await the inevitable.

Grouped about the room, in sundry positions of despair, will be a choice collection of "cases," whose faces will be illumined with that hopeful expression which is characteristic of Egyptian mummies. Some of them will give indisputable evidence of having been there for nigh onto three weeks without a thing to eat. As you seat yourself they will regard you with the icy stare that welcomes a newcomer at a summer hotel. But don't lose heart—their look of suspicion tinged with contempt and poorly hid hostility will fade as they recognize that you are one of the frater-



nity. But right at the start you are an interloper — an intruder from without—and they naturally resent your breezy, cheering entrance. For the first ten minutes they will gaze at you with the utter abandon of a baby gazing for the first time upon his father's face. Don't let it disconcert you — busy yourself with a brief survey of the carpet and a rough calculation of the number of threads per inch. This won't be hard, as *nothing* is visible *except* the threads. The balance departed this life in the early eighties.

Then as you grow more bold, allow your eyes to ascend the leg of the table in the middle of the room. At the top you'll see a pile of magazines, but don't disgrace yourself before the habitués of the place by reaching for one of them. It is bad form, and anyway, those six on the left are the first six *Ladies' Home Journals* that Mr. Bok ever got out and the doctor's saving them until they assume some value as reliques of a bygone age. That copy of *Life*, enticingly displayed upon the left, is just a decoy too. It is of the vintage of June, 1896. The fat woman in the corner just fell for it, and you can see the effect of her misplay — she's furtively daubing her eyes in an apologetic way. All the rest of the patients are down on her 'cause she looked at it. If you make the same break, they'll stare at you until you'll feel morally certain that you ripped your trousers on the elevator grill.

You can look at the walls, if you care to, but it won't do any good—you know what's there without looking. By the door is that

isn't this a
unique
collection of
antique
magazines



No.
417



H. S.
Straight
Shank
Drill



No.
426



H. S.
Oil
Tube
Drill



No.
436



H. S.
Black-
smiths'
Drill



No.
444



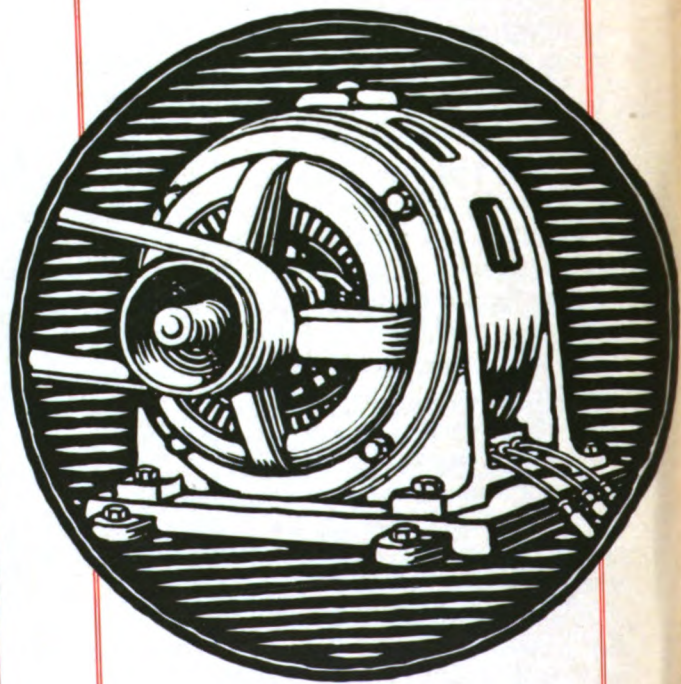
H. S.
Bonding
Drill



No.
930



H. S.
Paragon'
Forged
Drills
Hold
World's
Drilling



The Overload

WE all know the dangers involved when a sudden overload is thrown upon an electric motor — identically the same dangers may arise in an *industry*.

Q Two years ago if we had attempted to shoulder the full load of demand for "Cleveland" drills without cautious preparation, something would surely have snapped.

Q Speed was naturally the first thought, but sober judgment required that we increase production only as fast as we increased the safeguards surrounding that production.

Q Because "Cleveland" production will never be permitted to outstrip the safeguards of quality, *you can count on your "Cleveland" tools of today as implicitly as ever in the past.*

THE
CLEVELAND  TWIST DRILL
COMPANY

NEW YORK

CLEVELAND

CHICAGO



No.
426



No.
436



No.
444



No.
930



H. S.
Oil
Tube
Drill



H. S.
Black-
smiths'
Drill



H. S.
Bonding
Drill



H. S.
Paragon'
Forged
Drills
Hold
World's
Record



picture of two women gossiping over a pot of tea — maybe it is something stronger, but it doesn't tell on the label. If you look at it from a distance it looks like a skull. It's one of those trick pictures and it's labeled "Vanity," in an attempt to show that it is useless to try to beat a doctor. If you grow weary of looking at the picture of a skull, you can sop up enthusiasm from a *real* one on

top of the bookcase. It's always nice to ponder how your cranium would look if it were sitting up there, and whether your gold tooth would show up well against the oak woodwork.

There are only two pictures — one of the Coliseum — yes, the same one they always have, with the lamp post in front and the general appearance of having been in the Chicago fire. The other is of a chap named Æsculapius. It's a picture of his bust surrounded by ravenous-looking snakes. He is labeled "The First Physician," but it never tells whether he ate the snakes or cut them up for pills. I'll have to find out about that and let you know later.

But why continue to recite the tale — you know it all — the squeak of that rocker propelled by the nervous spinster in black, the doleful tick of the clock, the antiseptic odor, and the dirty curtains in the window, the washstand with the dripping faucet. Yes, we see we have left out some important landmarks of the average M. D.'s office, but why expand upon the beauties of the scene or explain further why we have come to regard a doctor's office as a first-class spot for those whose life insurance policies permit suicide after the first year? Why indeed? This is the merrie, merrie Christmas time, and therefore let us turn our attention to something comparatively cheerful — like a toothache or the Xmas bills.

But isn't it a fact?

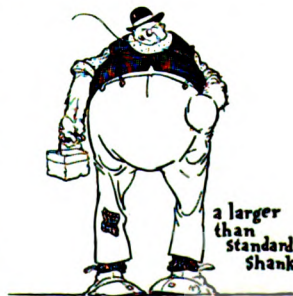
LARGER THAN STANDARD SHANKS

AN UNNECESSARY EXPENSE?

WE NEED hardly quote from The Mechanic's Primer to show why "special" tools cost more than tools of standard dimensions. All of us know from experience within our own shops that a "special," in the course of its manufacture, behaves very much like a consumptive jitney on a busy thoroughfare — not only moving slowly itself, but unavoidably delaying the entire procession as well. Such ABC information is entirely superfluous in these columns. "Specials" in themselves hold little interest for any of us, but today, when we're all unusually interested in reducing our production costs, a suggestion as to how to *avoid* a "special" is very likely to cause a stampede for the front row. It is this stampede that we now purpose to bring about.

One of the most common "specials" to come under our observation is the larger-than-standard shank. We'll admit that this "special," like a toy dog — the snippy shivery sort — may at times be considered quite a necessity. But experience leads us to believe that in the vast majority of cases the larger-than-standard shank is a wholly needless item of expense.

For illustrative purposes let's take a 61/64" high speed drill with a larger-than-standard No. 4 taper shank — standard shank being No. 3. To make this drill, a steel bar slightly larger than the extra-size shank must be used. Yet only a comparatively small part of this bar is actually turned to use, the balance being cut away, in order to bring the flutes down to correct size. An appreciable amount of costly steel is thus destroyed and wasted. And this waste plus the additional time involved in cutting down the bar and the other extraordinary operations required add enormously to the normal cost of the drill. But even this extra would be justifiable if there were no *more* economical method of accomplishing



No.
436



H. S.
Blacksmiths'
Drill



No.
444



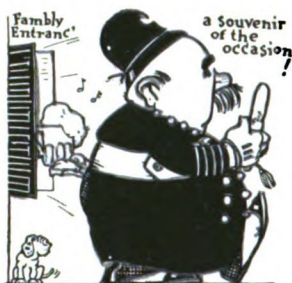
H. S.
Bonding
Drill



No.
930



H. S.
Paragon
Forged
Drills
Hold
World's



the same end. As the real object of the larger-than-standard shank is to obtain extra driving strength, our problem is to suggest a method of obtaining this same extra strength, *but at a reduced cost.* Our answer, we are well aware, will not fit all cases, but in a surprising number of instances we believe the shoe will slide on comfortably and wear magnificently.

You are all familiar with our double-tanged drills? They cost no more than the single-tanged sort. Why not take one of these double-tanged drills and slip it into one of those Perfect Double-Tang Sockets while we slip the saving into your pocket as a souvenir of the occasion?

Ah, but the socket will cost something! Now you *have* me — the socket *will* cost something, but in comparison with the cost of the larger-than-standard shank, the socket's cost is as a limpid tear in the middle of the Gulf Stream. If you had to buy a Double-Tang Socket for *every one* of those 61/64" drills, the additional per drill would be only about 16% — *less than half* the extra exacted by the larger-than-standard shank. *But you don't have to buy a socket for each drill* — one lonely Perfect Double-Tang Socket will outlast a hundred drills, and so, in fairness to the socket, pro-rate its cost over the number of drills it will serve, and what do you get? The cost of the socket per drill is about the price of a postage stamp or less.

On the smaller sizes, of course, the extent of the saving per drill will not be so amazing, but the saving on *all* your larger-than-standard shank drills — utterly regardless of their size — will be a sum that could better be used for gasoline hair restorers.

But will this combination of double-tanged socket and double-tanged drill give the same driving strength as the larger-than-standard shank? Yes, probably an even *greater* strength and freedom from breakage — but we can't prove this on paper. We *can*, however, prove it in your shop, or better yet *you* prove it and we'll let you be judge and jury and prosecuting attorney — that's how sure we are of the facts. But you want to

figure this all out for yourself; for you realize that we have had to talk in general terms and have only sketched out the outlines to the possibilities. To get to the heart of the proposition—to fit the shoe to your own particular foot—send for Perfect Double-Tang Catalog 388, and then prove for yourself that this little tip is true blue through and through.

SALESMANSHIP IN POLITICS

WHAT'S that — *Salesmanship in Politics*? Who in the world concocted such an unthinkable combination for a title to a perfectly sober article? There is almost as much salesmanship in politics as there is wool in a \$7.98 suit or joy in a chorus girl's smile.

Of course we are popularly supposed to be a nation of salesmen. Perhaps we are. Far be it from your humble servant to hurl the dampened bed quilt. But one thing we'll grant without argument—we like to *think* we are a nation of salesmen, and, to keep up the illusion, we have sketched and plotted and diagramed and dissected salesmanship, until now it stands revealed to the rabble in all its naked grandeur, like a physiology chart in a medical book. Salesmanship is no longer a gift of the gods, but a relatively simple matter—so simple, in fact, that almost any boob can now become a salesman, if he can find something that people want to buy.

If this salesmanship business keeps up — if it becomes a common thing, like advice and appendicitis, it is to be expected that business will go to the eternal bow-wows — not for the lack of salesmen — goodness no! There'll be a plethora of them — but for a lack of *buyers*. (You might put that down as Thing No. 9763 that will be sure to happen after the war.)

But whenever you grow blue contemplating the awful outlook of a world jam full of nothing but salesmen, take heart and gaze upon the lineaments of almost any political campaign. It will prove to you that we are still a deuce of a long ways from becoming a race of salesmen.

Although we eat, sleep and talk Salesmanship

Salesmanship



No.
444



H. S.
Bonding
Drill



No.
930



H. S.
Paragon
Forged
Drills
Hold
World's



Tellytics



eight days a week, and preach its value in business and social life, when it comes to making the greatest sale of all — the sale of a President to one hundred million people — we forget all our preachings, and return with avidity to the days when selling was practiced with the aid of a poison pot, a tom-tom and a hickory club.

Take the average case for example — that of a manufacturer who casts aside the call of the dollar to obey the call of the Party. The resulting transformation in his selling methods will be identical, be he a Republican or Democrat, an Independent or a Socialist, and this transformation will savor oddly of a certain Doctor Jekyll and Mr. Hyde.

As an astute and reputable manufacturer he probably holds two or three sales conventions every year. At such times he gathers all the boys about him and fills them full of the stuff that is handed out on such occasions in ton and car-load lots. He draws pretty curves and curlicues on a blackboard, to show them how to walk into a man's office in order to walk out with an order.

In private life he probably seeks his business somewhat after this fashion: "Mr. Buyer, here is a surpassingly fine tack. It is a wonderful tack. Note that nickel-plated edge — can't rust — impossible — patented — exclusively ours — see those anti-skid tops and the vanadium steel body and shank. It's a masterpiece. Our competitors' tacks? Oh, yes, they are good tacks. We don't use them ourselves but they are good tacks — mighty good tacks, but you can't blame folks for buying *our* tack after they once glimpse its beauteous outlines, can you? Oh, ours is a wonderful tack. Sign here, please."

Yes, that is the gentlemanly way he adopts, *when he is a manufacturer* — it is the soft seductive way of the modern salesman. But then, after some wild night down town, this same manufacturer is nominated for something. The very minute the political bug takes up lodgings in his belfry, he forgets that such a thing as salesmanship exists or ever did exist. The moment his nomination is assured, he peels off the first seven veneers of civilization, sticks a Colt in one pocket and a Smith & Wesson in the other, rolls up his sleeves, puts a knife in his teeth and a chunk of lead pipe in his paw, and springs to the job of selling his political



candidate after the fashion generally considered characteristic only of a Zulu head hunter.

Those cherished rules on Salesmanship are given a solar plexus punch; those soft instructions his Mother gave him when he left home for the Big Town are forgotten; Hoyle is tossed into the ash can like a month-old newspaper; even the Marquis of Queensbury's famous regulations are discarded as being too ladylike for a political campaign; the decks are cleared and our Salesmanship-soaked manufacturer rushes to the buyer of candidates — you and me — with a carefully prepared harangue, which runs something like this —

"EEEEEE owowowowow! Whoopee! Our competitors are rotten — they are crooks, scandalmongers, second-story men and pusillanimous pussies. They do not live up to their contracts, they sacrifice all to profit — oh, they are awful — in passing I might tell you that we too have something to sell but I have no time for that at present — our competition is too horrible. I will take your order for my candidate, if I must, but *first* let me tell you how unscrupulous are the ways of the other fellow" — etc., *fortissimo* until election is o'er.

And oh, the pity of it — the charges and countercharges, the spectacle of erst-while dignified and respectable citizens dancing verbal hula-hula dances on the public corners to attract the attention of the throng — the medicine shows with their gasoline torches, hoarse-voiced criers and snake charmers, and all the panoply of medieval salesmanship unearthed and rejuvenated to assist in the making of a sale whose immensity dwarfs the mightiest deeds of such Master Salesmen as Chalmers, Schwab and Selfridge.

If there is anything of Salesmanship in the bedlam of bewildering noise that we have come to know as a political campaign, I cannot find it. Is it any wonder that civic and national officers, "sold" to us amid so much turmoil and tumult, are often found wanting when weighed on the scales of more sober judgment? If the same tactics were adopted in selling the products of any other industry, that luckless industry would soon find its hide decorating the records of the Insolvency Courts throughout the length and breadth of the land. The selling methods of the modern political campaign are a nauseous relic of the lurid street fairs of ancient Cairo, and as such they are foreordained to a similar fate.

Some day a Salesman will step into politics. He will be a Big Man with the strength of his convictions upon him — cool, quiet, and soft of voice. But his



No.
930



H. S.
'Paragon'
Forged
Drills
Hold
World's



message will ring out like a shrill note of the piccolo amidst the sullen roar of Niagara. His will not be a political proposition but a sales proposition, and he will recognize it as such, and handle it as such. He will sell his political candidacy as he would sell those tacks with the non-skid tops. *He will speak well of his competition, and establish confidence in his message.* This done, he will turn and, with the deft touch of the Master Salesman, he will make the greatest sale the world has ever known — the sale of a Man to one hundred million people.

And this man will be the right man. His Party will be proud of him. He will do things — big things — for behind him will be *one hundred million satisfied customers*, who bought him — not as a country bumpkin buys a gold brick, amidst the hurly-burly of a county fair — but as a business man buys tacks — as the result of sober decision founded on *true and permanent Salesmanship*.



YOUR CALENDAR

WE HAVE done something extremely original this year — we have prepared a *calendar*. We call it “The Critical Moment,” and to spare you needless anxiety we’ll tell you all about it. Of the forty or more distinct operations that transform the steel bar into a “Cleveland” drill, the hardening is the most vital. It is here that the drill becomes a drill — not in form alone but in metallurgical make-up as well. The hardening is in truth the real *birth* of the drill. Here all the skill and science already invested in that drill must be caught and held — or lost eternally. Only minute variations of time and temperature divide Success from Failure. These gradations are far too fine for human senses, but a machine with sight and touch infinitely more delicate than that granted to man, guards its burden of “Cleveland” drills with almost uncanny care. This machine is the culminating achievement of over forty years of intensive study and critical research into the hardening of drills.

The painting — in five colors — illustrates this critical moment — the correct hardening heat has just been reached and the warning light has flashed. The drills are being lifted from their molten bath and on toward the final steps in their journey to your drill press. You will feel the action it depicts. As an example of realism we have yet to see its equal. Nothing has been lost between the original scene and this calendar twin. It comes to you as it is — with one exception — the chap in the picture can’t chew cut plug and his original is an inveterate user of the stuff — but with that single expurgation we are sending you a glimpse into the life of a “Cleveland” drill and a little reminder of one of the reasons why “Cleveland” drills drill more holes per drill.

One thing only we ask — if by any mischance you do not receive your copy, let us know at once. Every “Drill Chips” subscriber should get one as a reward for his faithful reading of this molting magazine, but as our supply is limited we ask that you express any desire for additional copies in ample time to avoid disappointment.

A Good Christmas Gift

NOT A patent collar button or a pair of nice knit ear muffs—but a year's complimentary subscription to DRILL CHIPS—for your foremen.

Q They'll enjoy it, and it will help them to get more holes per drill for you.

Q Just send us their names and addresses—most of them will like to get it at home—and then you can settle back and enjoy the fruits of better drilling that follow in the wake of DRILL CHIPS.

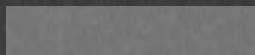
Q Better ring for that list now and start those subscriptions with the January issue—which we hope to make a good one, if we don't eat too much Christmas turkey.

THE
CLEVELAND  TWIST DRILL
COMPANY

NEW YORK

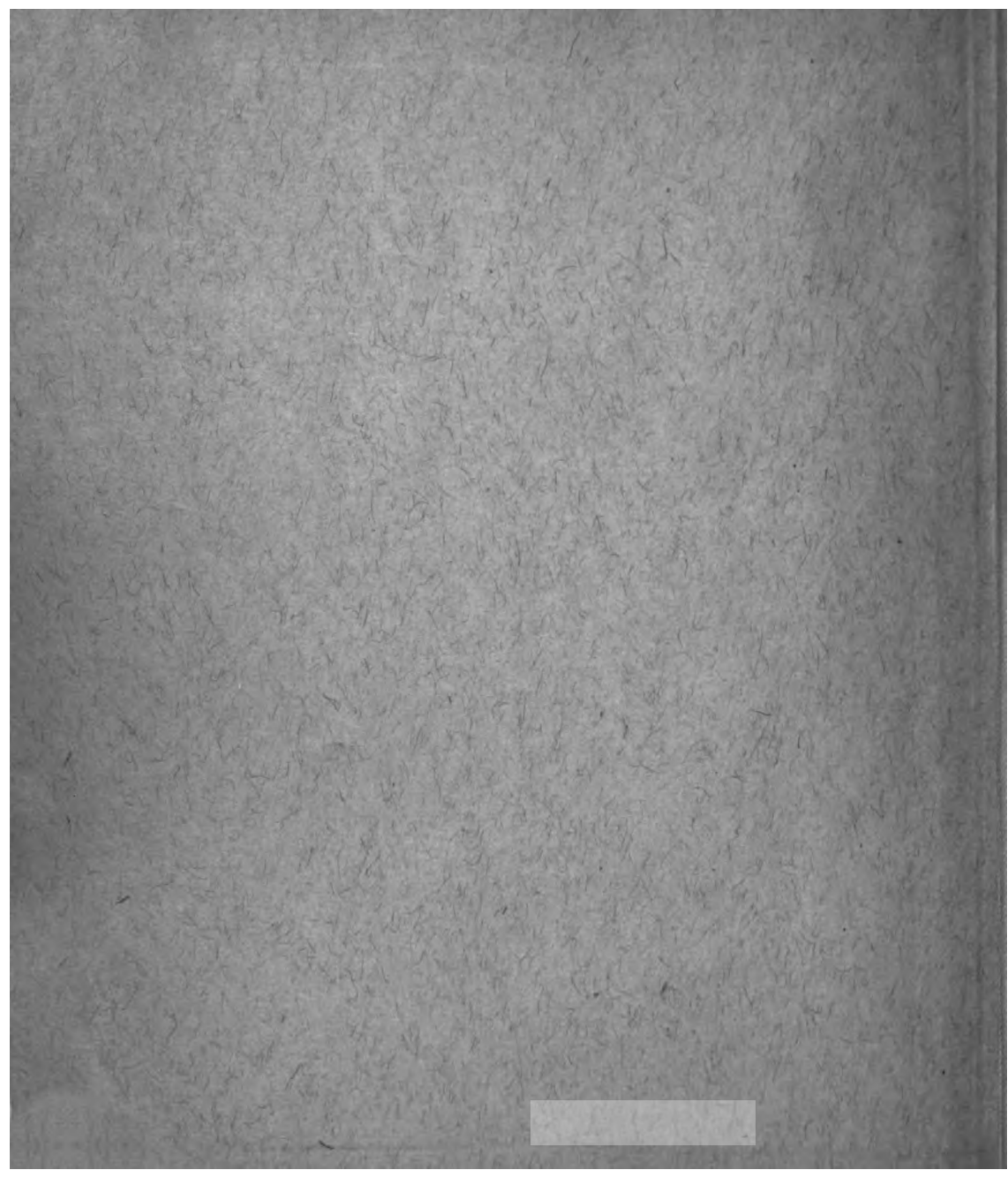
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